



# MARYLAND

## Venture Fund Annual Report



*June 2005*



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## Letter from the Governor

As Maryland's economy continues to grow and diversify, it remains imperative that we always look for new opportunities to invest in our future. This Administration knows well that the power of investment – public and private – fuels both the economy and the entrepreneurial spirit that enables it to drive forward. Upon taking office in January 2003, the Ehrlich-Steel Administration embraced the potential of programs like the Maryland Venture Fund, and chartered a course to further increase investment from a broader base of investors.

By increasing private equity investments by Maryland's Pension Fund to more than ten times the level of five years ago, the State of Maryland is stimulating local equity funds and increasing returns for future State retirees. In addition, the Department of Business and Economic Development (DBED), has held meetings in international investment capitals such as London, Zurich, Hong Kong, Israel, Singapore, South Korea, and India to foster relations with global fund managers to increase their investments in Maryland venture capital funds. We are currently seeing the results of our own investments as both our pension fund and State venture fund reach new levels of prosperity and global recognition.

Now in its eleventh year, the Maryland Venture Fund (the Fund) is a recognized leader regionally in seed and early-stage investing and has become a national model for state-run investment programs. This unique program invests in new and emerging Maryland-based companies that show promise. Over its life, the Maryland Venture Fund has invested in such high profile and successful companies as Advertising.com, Sourcefire and Gene Logic. Its investments have created more than 1,500 high-paying Maryland jobs, generated more than \$50 million in investment income in the state and attracted more than \$1 billion in private equity to Maryland.

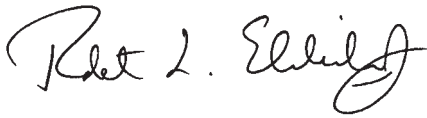
These efforts have not gone unnoticed. Last year Entrepreneur Magazine ranked the Maryland Venture Fund, along with the Maryland Technology Development Corporation, as one of the nation's largest public sector investors in start up and early stage companies. The Fund was also recognized last year by the U.S. Department of Commerce with the Excellence in Innovation Economic Development Award. The Award is presented each year to showcase best practices, highlight outstanding results and honor innovative economic development strategies of national significance.

The Maryland Venture Fund's commitment to early funding directly impacts companies' abilities to make advancements in their respective fields. With a \$500,000 Fund investment, Panacos Pharmaceuticals is a leader in HIV research with a product that is the first in a new class of drugs to treat HIV infection and is

currently in Phase 2 clinical trials. Also, as a result of the seed funding from the Fund, Sourcefire became a global leader in network defense solutions and was acquired by Check Point – a leading international internet security company – for more than \$225 million.

The Maryland Venture Fund is truly a valuable tool in Maryland's technology arsenal. As we continue to broaden our outreach to investors around the globe, we are confident that this program will continue to grow with its mission of making investments in Maryland companies that exhibit strong intellectual capital and seeding the global market with some of the most exciting technology that Maryland companies have to offer.

Sincerely,

A handwritten signature in black ink, reading "Robert L. Ehrlich, Jr." in a cursive style.

Robert L. Ehrlich, Jr.  
Governor





## Director's Message

What a difference a year makes! After a few years with minimal returns, the Maryland Venture Fund had over \$6.4 million in cash and stock exits this year from Advertising.com, Atto Biosciences, BioSynexus, Panacos Pharmaceuticals, and Platform Logic. As these companies really began to hit their stride, a warming mergers and acquisitions market in 2004-2005 rewarded them and their investors with nice exit opportunities. Looking forward to 2005-2006, we have reason to believe that the M&A market and a reviving IPO environment will continue to provide us with exit opportunities.

While we are always very happy to see solid financial returns, our real reward comes from funding and being a catalyst for funding the next generation of exciting companies through the Fund's two programs - the Challenge Investment Program (CIP) and the Enterprise Investment Fund (EIF). We once again had a very busy year of investing. We committed to invest in 27 companies, keeping about the same pace as last year. Of the 27 commitments made, 14 went to new portfolio companies. We are encouraged to see a steady pace in the number of high-quality start-ups looking for funding. We also had had 5 companies "graduate" from the CIP by receiving term sheets from private sector VC's. Three of these companies received commitments from both programs - CIP and EIF - during the year, indicating their rapid progress from start-up phase to venture-ready.

To break down the numbers a bit further:

Industry	<i>Advanced Technology</i>	<i>Biosciences</i>
<b>Number of Companies</b>	17	10
<b>New Portfolio Companies</b>	9	5
<b>New CIP Companies</b>	7	3

Program	<i>Challenge</i>	<i>Enterprise</i>
<b>Number of Deals</b>	17	13

The charts above indicate a significant shift away from seed and early-stage bioscience companies and a renewed interest in seed-stage advanced technology companies, compared to last year. For the advanced technology sector, we believe this may be the result of greater liquidity options through a warmer M&A market as well as a need by VC's to deploy capital.

On the other hand, we believe that the slow-down in the bioscience sector may be a result of the tough VC and public market conditions over the last few years coupled with investment mainly flowing to clinical-stage companies. Also, like many other funds, the charts above indicate that we continue to spend a significant portion of our time and investment dollars in existing portfolio companies, supporting them as they strive toward the next inflection point.

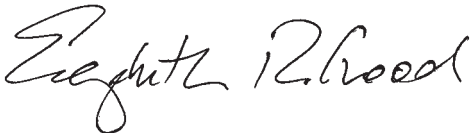
Please see page 8 for details.

## Looking Forward

The Maryland Venture Fund remains committed to seeking the most promising seed and early stage Maryland-based companies and enhancing them with investment dollars, advice, connections, and support. As always, the Fund will continue to focus on making investments in companies that exhibit strong intellectual capital and possess proprietary positions that pose barriers to entry. We will also continue to evaluate companies based on the following characteristics: creativity, management, proprietary advantage, defensible markets, scalability, liquidity, and a clear commercialization strategy.

Lastly, we strongly believe that our future success remains coupled to our continued ability to partner with the private sector. We sincerely thank the firms that have continued to partner with us over the years and we hope to continue to add additional partners as we move forward.

Best Regards,



Elizabeth Good, Managing Director  
Maryland Venture Fund  
Maryland Department of Business & Economic Development







## Commitments FY2005

### Challenge Investment Program

Adlyfe*	Montgomery	\$50,000
Alba Therapeutics	Baltimore City	\$50,000
AVIcode	Baltimore County	\$50,000
BioFortis*	Baltimore City	\$50,000
Codign*	Baltimore City	\$50,000
ComWare	Montgomery	\$100,000
Fidelis Security Systems*	Montgomery	\$100,000
Global Translation*	Montgomery	\$100,000
Grand Brands*	Baltimore City	\$100,000
Innovative Biosensors	Prince George's	\$100,000
Koolspan	Montgomery	\$50,000
MobileCom Networks	Montgomery	\$50,000
NeoDiagnostix*	Montgomery	\$50,000
Real Interface*	Anne Arundel	\$50,000
Salar	Baltimore City	\$100,000
String Bean Software*	Montgomery	\$50,000
TX2 Systems*	Baltimore City	\$50,000
<b>Total</b>		<b>\$1,150,000</b>

### Enterprise Investment Fund

A&G Pharmaceuticals^	Howard	\$400,000
Agentsmith^	Baltimore City	\$100,000
Alba Therapeutics^	Baltimore City	\$450,000
Avalon Pharmaceuticals	Montgomery	\$45,720
BD Metrics	Baltimore County	\$350,000
Chesapeake PERL	Prince George's	\$50,000
Covega*	Howard	\$250,000
Fidelis Security Systems^	Montgomery	\$500,000
GlycoMimetics*	Montgomery	\$500,000
Innovative Biosensors^	Prince George's	\$250,000
Intronn*	Montgomery	\$500,000
Jackbe Software*	Montgomery	\$250,000
Wisor	Montgomery	\$65,929
<b>Total</b>		<b>\$3,711,649</b>

**Rescinded commitments** **\$340,000**

**Total MVF Commitments** **\$4,521,649**

\* - new company in MVF portfolio

^ - graduated from CIP



# ENTERPRISE INVESTMENT FUND OVERVIEW

## Description

The Maryland Venture Fund, a division of the Maryland Department of Business and Economic Development (“DBED”), is a state-sponsored venture capital fund which makes equity investments through the Enterprise Investment Fund in early-stage, high technology firms that are seeking initial infusions of private equity. The Fund receives an annual appropriation from the State, which determines the investment budget for the year. Over the last five years, the Fund’s investment budget has averaged in excess of \$5 million, which includes the Challenge Investment Program as well as the Enterprise Investment Fund. For more information on the Challenge Investment Program, please refer to page 50.

The statute governing the Enterprise Investment Fund limits the State of Maryland’s total equity share in any given firm to 25 percent. The Enterprise Investment Fund requires a minimum 3:1 outside investor co-match through a sophisticated investor (a proven venture capital firm, a corporate strategic partner and/or a proven angel investor). The interpretation of the term “sophisticated” is at the sole discretion of the Maryland Venture Fund.

The Fund makes investments in the range of \$150,000 to \$500,000, typically as part of the “Series A” round. Furthermore, follow-on investments are made in subsequent rounds when the budget permits and if appropriate. As an independent control mechanism for this investment initiative, an outside Advisory Board comprised of nine members reviews these investments. The Fund’s investment terms are for a maximum of 15 years, and it requires that the portfolio company retains its principal place of business within the State of Maryland for a period of five years. In the event that the company moves from the State within this period, DBED has a “put” on their equity in the departing company at cost plus 10 percent, or fair market value, whichever is greater.

## Performance

The Enterprise Investment Fund has taken equity positions in 63 individual Maryland-based companies. The cost basis of these investments thus far has been approximately \$27 million since January 1, 1994. The Fund has generated approximately \$55 million in cash returns since 1994. The portfolio of active companies currently has a fair market value of approximately \$21.4 million. As of June 30, 2005, eleven companies have had successful exits via acquisition or IPO. For more details on the Fund’s returns, please refer to page 12.





## ENTERPRISE INVESTMENT FUND SUMMARY, AS OF JUNE 30, 2005

Date of Investment	Company	County	Investment	Status	# of Employees
10/16/2001	Advanced BioNutrition	Howard	\$600,001	Private	21
04/04/2005	AgentSmith^	Baltimore City	\$225,000	Private	10
12/28/2004	Alba Therapeutics*^	Baltimore City	\$150,000	Private	6
03/12/2003	Artesian Therapeutics	Montgomery	\$500,000	Private	4
08/29/2002	Artifact Software^	Baltimore City	\$350,000	Private	10
11/16/2001	Avalon Pharmaceuticals	Montgomery	\$545,721	Private	50
06/27/2003	BD Metrics^	Baltimore	\$316,666	Private	42
05/1/2002	BioSET	Prince George's	\$500,000	Private	78
09/16/2002	BlueFire Security Technologies^	Baltimore City	\$452,575	Private	36
03/16/2000	Chesapeake PERL^	Howard	\$650,000	Private	16
10/02/2002	CodeRyte	Montgomery	\$354,216	Private	70
03/07/2005	Covega*	Howard	\$250,000	Private	65
04/02/1996	Cylex^	Howard	\$825,000	Private	29
03/25/1997	CytImmune Sciences	Montgomery	\$300,000	Private	11
09/30/2002	EyeTel^	Howard	\$503,344	Private	30
12/29/2000	FASgen	Baltimore City	\$500,000	Private	6
03/18/2005	Fidelis Security Systems*^	Montgomery	\$500,000	Private	15
12/19/2000	Functional Genetics	Montgomery	\$750,000	Private	15
08/02/2004	GlycoMimetics*	Montgomery	\$500,000	Private	14
05/18/2005	Innovative Biosensors^	Prince George's	\$500,000	Private	9
09/22/2000	Intradigm^	Montgomery	\$500,000	Private	8
02/28/2002	Maxcyte	Montgomery	\$500,000	Private	20
12/18/1996	MetaMorphix	Prince George's	\$500,000	Private	17
12/11/2001	Naviscan	Montgomery	\$648,672	Private	12
07/16/2002	NavTrak	Wicomico	\$500,000	Private	72
08/19/1999	NeuralStem Pharmaceuticals	Montgomery	\$500,000	Private	3
10/7/1998	NexTone Communications^	Montgomery	\$200,000	Private	150
09/22/1994	Osiris Therapeutics	Baltimore City	\$500,000	Private	49
07/21/1998	Paratek Microwave	Howard	\$225,000	Private	43
10/31/2000	Psychiatric Genomics	Montgomery	\$500,000	Private	14
11/20/2002	Qovia^	Frederick	\$775,000	Private	45
07/17/2002	Reactive Nanotechnologies^	Baltimore	\$262,148	Private	37
03/17/1995	RF Technologies	Howard	\$299,990	Private	5

<b>Date of Investment</b>	<b>Company</b>	<b>County</b>	<b>Investment</b>	<b>Status</b>	<b># of Employees</b>
10/03/1997	Solution Technology International^	Garrett	\$350,000	Private	6
02/01/2002	SourceFire	Howard	\$550,000	Private	120
01/08/2001	Vapotherm^	Queen Anne's	\$500,000	Private	30
04/28/1998	Wisor Telecom^	Montgomery	\$450,000	Private	50

#### **EIF Summary**

Current Portfolio Cost	\$17,033,333
Write-offs	\$ 3,287,505
Exited Portfolio Costs	\$ 6,964,921

**Total Invested** **\$27,285,759**

**Current Portfolio FMV #** **\$21,405,381**

**Realized Value of Exits** **\$54,709,176**

\* - new company in MVF portfolio ^ - graduated from CIP

# - FMV as of 6/3/05





## REALIZED EXITS, JUNE 30, 2005

Company	Date of Exit	Investment	Realized Value	Unrealized FMV
Advertising.com	08/03/2004	\$ 499,991	\$ 1,479,730	\$ 107,493
Aptus Pharmaceuticals	06/30/2005	\$ 500,000	–	\$ 353,503
Atto Biosciences	07/01/2004	\$ 500,000	\$ 605,344	
Biosynexus	05/26/2005	\$ 500,000	\$ 598,961	\$ 149,740
eVin, Inc. (formerly VinNet, Inc.)	06/15/2000	\$ 275,000	\$ 36,447	
Gene Logic, Inc.(GLGC)	05/22/2000	\$ 500,000	\$ 17,169,307	
Guilford Pharmaceuticals, Inc.	04/01/1999	\$ 250,000	\$ 536,092	
Immersion (IMMR) (f.k.a. HT Medical Systems)	06/01/1998	\$ 250,000	\$ 249,134	\$ 69,876
ID Biomedical (f.k.a. Intellivax, Inc.)	06/13/2003	\$ 300,000	\$ 553,357	
Meridian Medical Tech.	04/09/2002	\$ 289,930	\$ 544,149	
NetBalance Inc.	09/30/2001	\$ 450,000	\$ 22,948	
NewComm Net	01/12/2000	\$ 500,000	\$ 566,666	
Panacos Pharmaceuticals	03/11/2005	\$ 500,000	\$ 754,855	\$ 467,048
Platform Logic	12/29/2004	\$ 600,000	\$ 2,964,944	\$ 296,495
Powerize.com (formerly Hoover's, KnowledgeLink)	04/07/2003	\$ 550,000	\$ 397,915	
Visual Networks, Inc. (VNWK)	04/01/1999	\$ 250,000	\$ 28,133,879	
Yafo Networks	02/14/2003	\$ 250,000	\$ 95,447	
<b>Subtotal</b>		<b>\$6,964,921</b>	<b>\$54,709,176</b>	<b>\$1,444,156</b>
<b>Total</b>		<b>\$6,964,921</b>	<b>\$54,709,176</b>	<b>\$1,444,156</b>

## ENTERPRISE INVESTMENT FUND OVERVIEW

### Advanced BioNutrition Corporation

**Web site:** www.advancedbionutrition.com

**Location:** Columbia, MD

**MD Employees:** 21

#### Management Team

Dr. David Kyle, *President and CEO*

Dr. Walt Rakitsky, *VP of Commercial Development*

Dr. F.C. Thomas Allnutt, *VP of R&D*

Mr. Alfred Discepolo, *CFO*

#### Other Major Co-Investors

Eastbourne Capital

Sherbrooke Capital Partners

BASF Venture Capital GmbH

SAM Sustainability Private Equity LLP

Arancia International Inc.

#### Cost to the State of Maryland

\$600,001

#### History

Advanced BioNutrition Corporation (ABN) was spun out from Martek Biosciences Corp (Martek) in Q4 of 2001 with a mission to commercialize its science-based aquaculture products. ABN has now in-licensed more than 230 issued patents pertaining to Martek's DHA and ARA technology as they apply to animal products. ABN is also developing its next generation of products, and has filed 23 fundamental broad-ranging patents in the areas of animal disease control and health management. ABN is presently in the stage of transitioning this intellectual property estate into revenues through the sale of proprietary products and licensing of novel technology.

#### Products

ABN is a science-based, and business-driven animal health and nutrition company with sales from existing proprietary products and a strong pipeline of new products and technologies. ABN's DHA- and ARA-based AquaGrow® line of nutritional enrichment feeds is sold through distributors to hatcheries and grow-out facilities throughout the world and reached about \$1 Million in sales in 2004. ABN also developed the first complete replacement for fishmeal and fish oil for use in shrimp feeds and companion animals, and is in the premarketing stage for this safe and sustainable product that can provide this industry with price predictability, consistent high quality, and traceability unattainable from fishmeal. ABN's near-term R&D focus is on the development of a new encapsulation system based on natural, biodegradable polymers that can be used for the oral delivery of probiotics, enzymes, vaccines and omega-3 oils. The key benefit of this novel microencapsulation is the protection of the payload from destruction by gastric juices, while still allowing its quantitative release in the intestine. Applications for this technology extend beyond the animal health field, and are now being applied to the oral delivery of human nutritional products as well.

#### Competition

ABN's DHA-based nutritional products are sourced from fermentatively grown microalgae, a sustainable plant resource. Competing products are based on fishmeal and fish oil, a non-sustainable resource whose price is on the rise. There is no direct competition for the disease control product line under development and the microencapsulation technology is considered unique in the industry.

#### Events

ABN closed a Series B round in December 2005 bringing the total investment to \$13.5M.





## **Agentsmith, Inc.**

**Website:** [www.agent-smith.com](http://www.agent-smith.com)

**Location:** Baltimore, MD

**MD Employees:** 10

### **Management Team**

Michael Cooper, *CEO*

Paul Gorman, *CTO*

Anne Shiflett, *CFO*

### **Other Co-Investors**

Sinclair Group

### **Cost to State of Maryland**

\$225,000

### **History**

Agentsmith's revenue management solutions complete a decade-long search by the media industry for a technology solution that could handle the complex transactions inherent in the buying and selling of advertising. With Agentsmith's software solutions, media companies can identify profitable accounts, significantly increase sales productivity, and optimize the utilization and pricing of their inventory all in an effort to lower costs and increase revenues. Several of the management have been involved in a company that specialized in credit scoring techniques based on knowledge of neural networks.

### **Products**

Agentsmith has developed software for media properties that allow them to strategically manage inventory, account profitability and sales rep performance. As the customer's sophistication grows, their analytical needs expand to other Agentsmith products. The product offering spans five distinct categories depending upon the customers needs. The categories are 1) Revenue Information Platform products, 2) Revenue Planning Tools, 3) Sales Workflow & Control

products, 4) Performance Measurement Tools and 5) Yield Optimization.

### **Competition**

Revenue management (RM) companies have successfully penetrated airline, hotel and retail marketplaces positively impacting revenues by 2%-8%. However, these same RM companies have been unable to penetrate media despite several attempts due to the complexities of the media buying process.

### **Events**

The Maryland Venture Fund closed on a round of funding with Agentsmith in April 2005. Sinclair participated in what was their second tranche of a larger round.



## Alba Therapeutics, Inc.

**Web site:** www.albatherapeutics.com

**Location:** Baltimore, MD

**MD Employees:** 6

### Management Team

Blake M. Paterson, M.D., CEO

Alessio Fasano, M.D., CSO

### Other Co-Investors

Schroeder Ventures Life Sciences

Alta Partners

HealthCap

Red Abbey Ventures

Esperance BioVentures

Astellas Ventures

### Cost to State of Maryland

\$300,000

### History

Alba Therapeutics Corporation ("Alba"), is focused on the development and commercialization of peptides and small molecules that exploit the biology of zonulin. Zonulin is an endogenous signaling protein that transiently and reversibly opens the tight junctions of epithelial and endothelial tissues. Alba's portfolio of over 120 patents issued and applied covers the protein and its receptor, composition of matter and methods of use. Applications range from drug delivery to treatment of diseases involving tight junction dysfunction and autoimmunity. The most immediate opportunities for commercialization are within the immunomodulation and inflammation ("IDI") therapeutic area. IDI is growing rapidly and has the potential to achieve revenues of \$70B by 2010. These discoveries were developed by Dr. Alessio Fasano at the University of Maryland and validated by researchers worldwide.

### Products

Lead product development is focused on two immediate IDI applications, the use of a zonulin receptor antagonist (AT-1001) to block the autoimmune progression of celiac disease ("CD") and type 1 diabetes ("T1D"). The market for a CD therapy may exceed \$1B. In the US, 3 million Americans are estimated to be affected with celiac disease. T1D development is focused on preserving residual beta cell function. The opportunity for this treatment approach may well exceed \$1B. A 4th generation agonist (AT-1002) is under development for use as a drug or antigen delivery agent. Drug and antigen delivery is essential to the future growth of the therapeutic bioproducts industry. The drug and vaccine delivery industry is growing rapidly, and is projected to grow to \$41B by 2007.

### Competition

Currently complete elimination of dietary gluten is the only therapy for Celiac Disease. Several organizations have been formed to help patients meet the challenge of gluten avoidance. Diabetes is a life-long disease for which there is not yet a cure. Treatments include injection of insulin and dietary management.

### Events

In May 2005 the Company raised \$2M in seed money from Astellas Ventures, Esperance BioVentures, and angel investors.

In August 2005 the Company closed a \$30M Series A led by Schroeder Ventures Life Sciences and Alta Partners and rounded out by HealthCap and Red Abbey Ventures.







## Artesian Therapeutics, Inc.

**Web site:** [www.artesianrx.com](http://www.artesianrx.com)

**Location:** Gaithersburg, MD

**MD Employees:** 4

### Management Team

Peter Suzdak, Ph.D., *President and CEO*

Daniel P. Bednarik, Ph.D, *VP, Cardiovascular*

*Biology*

### Other Co-Investors

Oxford Bioscience Partners

Alexandria Real Estate Equities

### Cost to State of Maryland

\$500,000

### History

Artesian Therapeutics, Inc. is a privately-held biopharmaceutical company, founded in 2002, with the mission to discover and develop the next generation of novel disease-modifying and disease-reversing therapeutics for the treatment of cardiovascular disease. Artesian is pursuing a strategy to discover and develop proprietary small molecule compounds with improved safety and efficacy, which are based on the known chemical and biological properties of existing drugs.

### Products

Artesian's novel approach couples two desirable therapeutic activities into a single compound, termed a "Dual-Pharmacophore" molecule, to produce optimal biological pathway modulation. By starting with individual pharmacophoric elements with known clinical efficacy and predictive toxicity, the overall likelihood of clinical efficacy is greatly increased. Attaching the individual pharmacophores together with a flexible tether and a built-in metabolism site assures that the resulting pharmacology is linked together.

Artesian's most advanced drug discovery program, termed the Calcium Regulatory Pathway Modulator (CRPM) program, centers around simultaneously inhibiting Type-3 Phosphodiesterase (PDE3) and the L-Type calcium channel with proprietary "dual-pharmacophore" molecules.

Artesian's second drug discovery program (BRPM) represents a novel strategy to attenuate the deleterious effects of excessive neurohormonal activation, which occurs in congestive heart failure (CHF).

Artesian has selected a lead compound from its CRPM program, ATI 22-136, and is on track for IND filing in 3Q06. Selection of a lead compound for preclinical development from Artesian's BRPM program is on track for 1Q06 with an IND filing in 4Q06.

### Competition

Current therapeutic approaches to CHF (such as anti-hypertensives, beta blockers, ACE inhibitors, positive inotropes, diuretics, vasodilators and lipid-lowering drugs) produce symptomatic relief but, for the most part, do not affect the underlying disease.

### Events

Artesian closed its first Series A round in March 2003.

In August 2005, Artesian signed a letter of intent whereby Artesian will be acquired by Cardiome Pharma Corp. of Vancouver, Canada.

## Artifact Software

**Web site:** www.artifactsoftware.com

**Location:** Baltimore, MD

**MD Employees:** 10

### Management Team

Mark Wesker, *CEO*

Paul Martin, *CTO*

Jeff Mason, *VP of Marketing*

### Other Co-Investors

Intersouth Partners

Draper Atlantic

New Markets Growth Fund

Mid-Atlantic Ventures

### Cost to State of Maryland

\$350,000

### History

Artifact Software was founded in 2002. Mark Wesker is the former President and COO of Sequoia Software, which was acquired by Citrix Systems in 2001.

### Products

Artifact is creating a hosted software delivery lifecycle service that enables small to mid-sized software development services companies to build and manage trusted customers' relationships and reduce the risks and costs in delivering software applications. The "Lighthouse" product will automate a number of development processes, provide effective communication and collaboration capabilities, and allow for real-time input from key stakeholders in the global software supply delivery chain.

### Competition

This model differs from the standard application service provider offering in that a combination of the "best of breed" applications employed through Artifact will result in significantly less expensive development costs. An IBM model, for example, would force users to have to use the Company's premium-priced Rational line of products with WebSphere.

### Events

None to report.





## Avalon Pharmaceuticals, Inc.

**Web site:** [www.avalonrx.com](http://www.avalonrx.com)

**Location:** Germantown, MD

**MD Employees:** 50

### Management Team

Kenneth Carter, *President & CEO*

Thomas G. David, *General Counsel & SVP of Operations*

Gary Lessing, *CFO*

### Other Co-Investors

Oxford Bioscience Partners

CDP Capital

EuclidSR Partners

AIG Global Investment Group

GIMV

Forward Ventures

H&Q Healthcare Investors

MDS Capital

Royal Bank of Canada

### Cost to State of Maryland

\$545,721

### History

Avalon Pharmaceuticals, Inc. (Avalon) is a biopharmaceutical company focused on the discovery and development of small molecule drug candidates for the treatment of cancer. Avalon seeks to discover and develop novel therapeutics through the use of a comprehensive, innovative and proprietary suite of technologies based upon large-scale gene expression analysis called AvalonRx™.

### Products

As a fully integrated drug discovery organization, with novel approaches to screening, characterization and optimization of novel drugs, Avalon has ongoing programs on selected drug candidates in all stages of discovery and preclinical development.

Avalon's first product, AVN944, is an oral small molecule drug candidate that inhibits inosine monophosphate dehydrogenase (IMPDH). The compound was licensed from Vertex Pharmaceuticals Inc. in February 2005. IMPDH is an enzyme that is critical for cells to be able to synthesize guanosine triphosphate (GTP), a molecule required for DNA synthesis and cellular signaling. IMPDH is over expressed in some cancer cells, especially in the case of hematological malignancies and In laboratory experiments, AVN944 has been shown to inhibit IMPDH activity in cells, and suppress pools of GTP. Results from preclinical studies of AVN944 indicate that AVN944 inhibited the proliferation of lymphoid and myeloid cells, the principal cells involved in the most common types of human leukemias.

Avalon intends to file an IND and initiate U.S. Phase I clinical trials in the second half of 2005 for the treatment of hematological cancers

### Competition

Avalon competes with other companies seeking to identify novel small molecule anti-cancer therapeutics.

### Events

December 2004 – Avalon was recognized by Red Herring as one of the top 100 innovator companies.

February 2005 – Avalon licenses Licenses VX-944 from Vertex Pharmaceuticals for Development and Commercialization in the Treatment of Cancer

May 2005 – Avalon Files Registration Statement for Proposed Initial Public Offering

September 2005 – Avalon Announces Pricing of Initial Public Offering for listing on NASDAQ and Pacific Exchange, Inc.

## **BD Metrics, Inc.**

**Web site:** [www.bdmetrics.com](http://www.bdmetrics.com)

**Location:** Columbia, MD

**MD Employees:** 42

### **Management Team**

Rick Geritz, *CEO*

Mike Woosley, *CFO*

Don Mahoney, *COO*

Paul Navarro, *SVP*

### **Other Co-Investors**

Valhalla Partners

New Markets Growth Fund

### **Cost to State of Maryland**

\$316,666

### **History**

BDMetrics provides relationship analytics technology and software that generates highly-qualified business relationships. The Company's sales channel is the trade show industry. Most US corporations participate in one to three trade shows per year and since a face-to-face meeting is the most valuable type of lead, the Company's Smartbooth product is being widely distributed to over 50,000 companies (including the Fortune 1,000) in 2006, 100,000 in 2007, and 200,000 in 2008.

### **Products**

The Company's on-demand software is already used by leading shows such as NAB, CES, CTIA, and PackExpo and has 130 events sold through 2008. The Company earns fees from event owners for providing event infrastructure (SmartEvent), and subscription fees from exhibitors for generated leads (SmartBooth™) and non show users (SmartAssociation™). The behavioral analytics technology is supported by two pending patent applications.

The Company's trade show channel is an industry of approximately \$13 B in the US. The Company's event tools support show operations, a \$7 to \$8 B segment of this market. The Company's exhibitor tools provide highly qualified leads to corporations, tapping budgets in corporate marketing and CRM that substantially exceed \$100 B. The Company has been asked by some of its largest customers to begin to support non-US events. The European industry is approximately the same size as the US industry (\$10- to \$15 B).

### **Competition**

There are a number of companies in the social networking space that have some similarities, but these companies generally do not offer business analytics as a value-added product.

### **Events**

In late June 2004, the Company closed on its initial round of venture financing of approximately \$2.3 million.

BDMetrics and its products gained international recognition in 2004-2005: "The #1 Trend in 2005", by EXPO Magazine, "Innovation of the Year" in 2004 by Tradeshow Executive Magazine, and "Best E-marketing" and "Best New Product" Reed's global marketing conference in Prague 2005.





## BioSurface Engineering Technologies, Inc (BioSET)

**Web site:** [www.biosetinc.com](http://www.biosetinc.com)

**Location:** College Park, MD

**Employees:** 78

### Management Team

Bill Mavity, *Chairman of the Board*

Tom Roueche, *President & CEO*

Paul Zamora, PhD, *VP and CSO*

Linda Finn, *VP Finance and Administration*

### Other Co-Investors

The Vertical Group

EDF Ventures

Memphis BioVentures

New Markets Growth Fund

### Cost to State of Maryland

\$500,000

### History

BioSET was formed March 2001 through a “spin out” to capitalize on over ten years of research and development in advanced biocompatible coating technologies in the medical device industry. The management team and medical device surface modification technology came from InnerDyne, Inc., which had merged with United States Surgical, a division of Tyco Healthcare Group, LP.

### Products

BioSET has developed biomimetic synthetic peptides that act as agonist growth factors for tissue regeneration and accelerated healing. These peptides have shown in animal studies to mimic the proliferative effect of recombinant growth factors and in some cases have been shown to initiate differentiation of precursor cells as well. Currently BioSET has produced analogs of FGF2, VEGF, and partial analogs of BMP2 and has targeted additional tissue growth factors for synthesis. Mid year,

BioSET entered into a collaborative development and commercialization agreement with Biomet, Inc. The agreement provides for the companies to work together to achieve specific developmental milestones leading to the commercialization of synthetic growth factor products on a worldwide basis.

In addition to the peptide technology, BioSET has also developed a proprietary drug delivery system that enables a controlled dose effect from the surface of medical device materials that are commonly used clinically today. This system, called HepaSil, is a chemically modified variant of heparin, which binds to both the device surface and the target drug or peptide, then delivers the peptide to the target cells in its most bioavailable form. This compound is currently used in medical applications today and offers a highly cost efficient and easily integrated approach to drug delivery, with the added benefit of potentially improving the outcome associated with the drug of choice.

### Competition

There is much interest and research into the development of bioactive medical devices on the part of academia, early-stage research companies and corporate R&D. The convergence of biologics with medical devices is believed by many to play the leading role in future product development by the medical device industry. In addition to biologic approaches, some of which have entered the market, interest and focus is increasing in the use of novel synthetic peptides that can yield a more focused effect than biologic counterparts.

### Events

BioSET closed in excess of \$5M in a Series B round of financing in July 2004.



## Bluefire Security Technologies

**Web site:** [www.bluefiresecurity.com](http://www.bluefiresecurity.com)

**Location:** Baltimore, MD

**MD Employees:** 36

### Management Team

Mark Komisky, *CEO*

Dennis Komisky, *CTO*

Will Clemens, *CFO*

Scott Schelle, *COO*

### Other Co-Investors

Walker Ventures

Maryland Angels Council

J K & B Capital

Grotech Capital Group

Motorola Ventures

Blue Cloud Ventures

### Cost to State of Maryland

\$452,575

### History

Bluefire Security Technologies (Bluefire) solves today's handheld security problems and addresses tomorrow's wireless threats with centrally managed, multilayered software. The Company's patent-pending software has been tested and selected by leading financial services firms, government agencies and medical centers. In addition, Bluefire has established relationships with global systems integrators, hardware OEMs and wireless carriers that are producing significant customer opportunities and revenue.

### Products

The Company's flagship product, Bluefire Mobile Firewall Plus, is the industry's only fully integrated handheld security solution that protects lost and stolen devices, prevents attacks and unauthorized access, enforces security policies and monitors

activity on devices. Bluefire Mobile Firewall Plus is the only solution that provides multiple layers of security on the device firewall, Virtual Private Network (VPN), intrusion prevention, FIPS 140-2 validated encryption, authentication, integrity monitoring and central management to protect lost and stolen devices and prevent unauthorized users from exploiting handhelds as a backdoor to your enterprise.

### Competition

Bluefire is the only company with a firewall and VPN for mobile and wireless devices. A number of companies have developed stand-alone authentication and file encryption products, which compete with a feature of the Bluefire product but do not offer the complete security suite that Bluefire offers. Bluefire has filed patents that create a significant barrier to entry to any company attempting to develop similar firewall and intrusion detection systems on a wireless device. Potential competitors include traditional firewall or anti-virus companies that may attempt to migrate their server or PC-based products to mobile and wireless devices. However, their expertise in developing large server-based software based on IP networks will not translate well to developing small, efficient filter engines capable of addressing multiple networks across multiple devices.

### Events

This year Bluefire has seen significant sales traction in government and commercial sectors and has expanded its strategic business relationships with Motorola, Cisco, Bank of America, Symantec, Sprint, HP, Dell, and others.





## Chesapeake PERL, Inc.

**Web site:** [www.c-perl.com](http://www.c-perl.com)

**Location:** Savage, MD

**MD Employees:** 16

### Management Team

Terry E. Chase, *President*

David C. Davis, *VP Manufacturing*

Dr. Richard Welch, *VP Process Development*

Catherine E. Vorwald, *Director, Business Development*

### Other Co-Investors

American Society of Microbiology

Other Private Investors

### Cost to State of Maryland

\$650,000

### History

Chesapeake PERL, Inc. was founded by University of Maryland researchers and spun out to commercialize a low-cost manufacturing system for recombinant (genetically engineered) proteins. The manufacturing system changes simple insect larvae into efficient mini-bioreactors that produce recombinant proteins at high quality while substantially reducing costs. The Company received its Series A round of financing in December 2001.

### Products

Chesapeake PERL has developed a platform technology for mass production of recombinant proteins from insect larvae allowing both rapid and large-scale expression of a broad range of high-quality proteins with no human pathogens and without expensive process development and scale-up. The Company's business model is based on developing fee-for-service partnerships and producing proprietary products. Although protein products have a wide variety of applications,

including therapeutics, diagnostics, industrial enzymes, agriculture and bioremediation uses, Chesapeake PERL is currently targeting specific sectors with smaller, more attainable, and non-FDA regulated markets. The Company is investing in their intellectual property portfolio, marketing and sales, and growing revenue for attainment of near-term profitability.

### Competition

Current processes are highly specific in that one process yields one product. Any change in process conditions, raw materials or product can disrupt production and require additional R&D. Chesapeake PERL has overcome technical barriers of efficient scale-up and harvesting time to give it a significant competitive advantage.

### Events

February 2005 – MOU with Battelle Memorial Institute

May 2005 – Aberdeen Technology Transfer Initiative Contract



## CodeRyte, Inc.

**Web site:** www.coderyte.com

**Location:** Bethesda, MD

**MD Employees:** 70

### Management Team

Richard Toren, *Chairman & President*

Andy Kapit, *CEO*

Alan Hinderer, *SVP, Sales*

Julie Stern, *SVP, Client Support*

Michael Niv, Ph.D., *Lead Architect*

Andy Van Etten, *VP, Engineering*

Lyle Schofield, *VP, Product Management*

### Other Co-Investors

Venrock Associates

Polaris Ventures

Cardinal Partners

Solstice Capital

Washington Tech Partners

Commons Capital

### Cost to State of Maryland

\$354,216

### History

CodeRyte, Inc. develops Natural Language Processing (NLP) and web-based technologies. Its Computer Assisted Coding (CAC) application currently automates and facilitates coding in five medical specialties: radiology, pathology, emergency medicine, pathology and orthopedics. Physicians, hospitals and medical billing companies use CodeRyte's CAC application to conquer the labor-intensive coding and data entry processes that make up a large part of the medical revenue cycle. Within the context of the language, CodeRyte's NLP technology leverages the full color of the physician's narrative to accurately determine the appropriate billing codes. The technology also supports fraud detection/compliance by quickly comparing or facilitating the comparison of transcribed medical

records to the claims submitted by the medical provider. The web application/workflow engine provides both clinical and business intelligence to support the business of CodeRyte's rapidly growing customer base.

### Products

Via its CodeAssist product CodeRyte provides its technology to the end-user via an ASP, subscription-based model. CodeRyte has a fully distributed workforce of medical coders so it can offer CodeComplete to organizations that want to fully outsource their medical coding function or who have occasional backlogs that, when not coded, delay reimbursement. Both models allow the customer to submit transcribed records over the Internet. CodeRyte processes each record in fewer than two seconds or, in batch mode, up to 200,000 per server.

### Competition

CodeRyte, Inc. currently has a direct competitor in A-Life Medical, Inc., which uses a rules-based approach to NLP. Using this more primitive version of NLP, A-Life must write millions of rules to deal with the ever-changing grammatical, syntactical, semantic and linguistic universe that define the healthcare delivery process. This is a more cumbersome, labor-intensive approach. Competition also comes from outsource coding services that are staffed by human coders.

### Events

CodeRyte, Inc. completed its Series A fund raising in March 2003, and its Series B in March 2004.

The Company has a number of marquee clients and strategic partners ranging from large, well-known academic medical centers to billing companies of various size and medical practices in each specialty for which the engine can assign codes.





## Covega Corporation

**Web site:** [www.covega.com](http://www.covega.com)

**Location:** Jessup, MD

**MD Employees:** 65

### Management Team

Joseph Dixon, *CEO*

Dan Petrescu, *President & Chief Sales Officer*

Ganesh Gopalakrishnan, Ph.D., *CTO*

### Other Co-Investors

OCG Ventures, LLC

Core Capital

Intersouth Partners

Siemens Venture Capital

### Cost to State of Maryland

\$250,000

### History

Covega Corporation, a leading provider of opto-electronic components and subsystems, was formed in March 2003 from the merger of CODEON Corp. and Quantum Photonics, Inc. Covega caters to a wide range of industries including telecom, datacom, cablecom, defense, medical, industrial, sensing, test & measurement and instrumentation. Covega's products set industry standards for high performance and reliability at low cost. A high level of product integration offers reduction in cost and complexity for systems integrators.

### Products

Covega's fab-light and fab-less customers take advantage of the fully vertically integrated Indium Phosphide and Lithium Niobate capabilities and foundry services which include in-house device design & modeling, wafer growth & fabrication and advanced E/O device packaging. Leveraging advanced Lithium Niobate and Indium Phosphide device and packaging technologies, Covega's broad

product offering includes Lithium Niobate amplitude and phase modulators as well as Indium Phosphide semiconductor optical amplifiers, gain chips, super luminescent diodes, broad area lasers and high power Fabry-Perot lasers.

### Competition

Competitors from the various market segments include JDS Uniphase, Sumitomo, Avanex, Exalos, and Kamelian. Covega holds significant market share for each product line that it markets, to the point where it is consistently among the top three vendors in a particular segment.

### Events

The company received a round of venture financing in March 2005, led by Intersouth Partners. The Maryland Venture Fund was the only new investor to participate.

## Cylex, Inc.

**Web site:** www.cylex.net

**Location:** Columbia, MD

**MD Employees:** 29

### Management Team

Judith A. Britz, Ph.D., *CEO and Chairman*

Timothy Ellis, *President*

Michael Petruny, *VP, Sales*

Stephen Sproul, *VP, Market Development*

Richard Kowalski, Ph.D., *Director, Clinical Studies*

Lucy Carruth, Ph.D., *Director, Product Development*

Cindy McGiffin, *VP Finance*

### Other Co-Investors

Early Stage Enterprises

NJTC Venture Fund SBIC, LP

Roche Finance Ltd.

Cahn Medical Technologies LLC

Others

### Cost to State of Maryland

\$825,000

### History

Cylex is a diagnostic company in the newly emerging field of predictive medicine. Cylex has developed and patented the first and only biomarker cleared by the FDA for measuring immune status in blood. This technology allows physicians to rapidly assess the impact of drugs or clinical condition on a patient's immune system that unlike other immunology assays provides the standardization required for routine clinical use. With this knowledge, physicians can substantially improve the treatment of life-threatening diseases through individualized patient management, thereby reducing side effects, lowering the cost of treatment, and improving outcomes and quality of life.

### Products

The Company has developed a diagnostic tool, called ImmuKnow™, which integrates magnetic separation of blood cells with bioluminescent detection for the measurement of immune system function. Cylex's immunodiagnostic kit measures the level of T-cell activation in blood. It has a major application in organ transplantation, AIDS, cancer, autoimmunity and other infectious diseases. The Company believes the ImmuKnow™ assay provides information about cellular immune response in a rapidly processed, easy-to-use form, which is more amenable to monitoring a disease's course than the antibody measurements alone. The product's advantage is that results are delivered quickly since current testing procedures take a week to perform. ImmuKnow™ enables physicians to improve treatment of life-threatening diseases or conditions through individualized management of a patient's immune system; thereby, reducing side effects, lowering cost of treatment and improving clinical response and quality of life.

### Competition

ImmuKnow™ is currently the only test for broad functional assessment of the immune system that has been cleared by the FDA and is useful in the clinical environment. A number of technologies are in use in the research laboratory but, in general, have not been designed for clinical use. They are Lymphoproliferation (LPA), Flow Cytometry and Cytokines, whether soluble or genotype microarray. Becton Dickinson and R&D Systems are among the players in this arena.

### Events

In June 2004, the Company completed a B round of financing for \$6.4M. Investors included existing investors as well as new investors, Roche Finance, NJTC Venture Fund, Cahn Medical Technologies and Nikko New Wave Innovation Fund.





## CytImmune Sciences, Inc.

**Web site:** [www.cytimmune.com](http://www.cytimmune.com)

**Location:** Rockville, MD

**MD Employees:** 11

### Management Team

Lawrence Tamarkin, Ph.D., *President & CEO*

Giulio F. Paciotti, Ph.D., *VP, R&D*

Harry Plonskier, *VP, Finance & CFO*

### Other Co-Investors

J. Dorrance Trusts

Other Private Investors

### Cost to State of Maryland

\$300,000

### History

CytImmune is a clinical stage biopharmaceutical based in Rockville, MD. The Company is developing a pipeline of multifunctional, next-generation therapeutics, binding known anti-cancer agents – whose toxicities currently prevent or severely limit clinical use – to its patented colloidal gold tumor-targeting nanotechnology. This approach creates safe therapies for a broad spectrum of cancers, significantly reducing toxicity (and side effects), increasing efficacy and improving quality of life. To date, CytImmune has raised nearly \$8 million from private investment and grant funding. The Company has 8 issued and allowed patents, and 24 pending patents for its colloidal gold technology in the U.S., the EU, Japan and Canada.

### Products

Aurimune™ – Aurimune will be tested in a Phase I clinical trial beginning in early 2006. The National Cancer Institute (NCI) will conduct this trial at no cost to the Company. After completing the Phase I studies, NCI plans to conduct three separate Phase II trials in patients with melanoma, colorectal cancer and urinary tract cancer.

AuriTol™ – CytImmune is collaborating with leading academic research institutions to develop new formulations of Taxol® using the Company's technology for the treatment of breast cancer (AuriTol). While under patent, Taxol sales exceeded \$2 billion per year worldwide. CytImmune's new formulation – with an anticipated increase in efficacy and reduction in side effects – has the potential to recapture the drug's pre-generic annual revenues.

Orovet™ – Based on positive in-vivo results, CytImmune licensed the world-wide veterinary oncology rights for a veterinary formulation of colloidal gold bound TNF to Boehringer Ingelheim Vetmedica (BIV).

### Competition

Major competition comes from liposomes or biodegradable polymers for drug delivery. Both technologies are best suited for carrying water insoluble molecules. In contrast, the colloidal gold drug delivery vector is better suited for protein biologics as well as small molecule therapeutics. Because these molecules are bound and carried on the surface of the nanoparticle they provide rapid biologic action by binding to cell surface receptors.

### Events

In September 2004, the Company won its second ATP award for The In Vitro Production of Human Monoclonal Antibodies.

## EyeTel Imaging, Inc.

**Web site:** www.eyetel-imaging.com

**Location:** Columbia, MD

**MD Employees:** 30

### Management Team

Richard W. Turner, Ph.D., *Chairman & CEO*

Donald A. Foscatto, *CFO*

Kirk E. Elliott, *VP, Operations/Logistics*

### Other Co-Investors

Bain Capital Ventures

Radius Ventures

Eli Lilly

### Cost to State of Maryland

\$503,344

### History

EyeTel was founded on the premise and objective that a more effective treatment model could be implemented to prevent blindness within the over 16 million people in the United States who have diabetes and are at risk of acquiring diabetic retinopathy, a serious potential complication of diabetes.

Diabetic retinopathy, an asymptomatic eye disease that is the leading cause of vision loss among working Americans, can largely be prevented through early detection and treatment. However, despite recommendations and guidelines from leading clinical associations (ADA–American Diabetes Association and AAO–American Academy of Ophthalmology), an estimated 50% of all patients with diabetes fail to have routine retinal eye examinations.

### Products/Services

EyeTel, in cooperation with The Wilmer Ophthalmologic Institute at Johns Hopkins University, developed the DigiScope® to detect changes in the microvasculature of the eye,

representative of diabetic retinopathy, in order to address this problem. The DigiScope permits patients to receive an effective retinal exam in the most convenient location possible—the setting where they receive their primary diabetes care.

Advanced features and proprietary software permit simple operation of the DigiScope, much in the same way as an ATM simplifies consumer banking functions. Consequently, no special technical skills are required in its operation unlike traditional technology. Even clerical staff can be trained to conduct tests using the touch-screen which easily guides the operator through the ten-minute procedure with audio and visual cues. Using the latest encryption and compression technology, the DigiScope then automatically transmits the patient's retinal images via the Internet to a central reading center for evaluation and reporting.

Within 24-48 hours, the primary care physician receives a complete patient report from the reading center, directed by retinal specialists from The Wilmer Ophthalmological Institute. Should an "Urgent Referral" condition be detected, EyeTel also alerts the attending physician by telephone.

### Competition

Less than half of the people with diabetes are currently receiving the recommended annual eye exam from an ophthalmologist, therefore there is a large unmet need to conduct these examinations in a more efficient and economical manner. Inoveon is the closest direct competitor to EyeTel. It operates diagnostic centers around the country for patient testing and data capture. This is still not a convenient option for the patient, since it requires a separate trip to the reading center.

### Events

EyeTel completed a follow-on Series B round of financing in August 2005 with existing investors.







## **FASgen, Inc.**

**Web site:** [www.fasgen.com](http://www.fasgen.com)

**Location:** Baltimore, MD

**MD Employees:** 6

### **Management Team**

Eric F. Stoer, *Chairman*

Albert H. Owens, Jr., M.D., *President and CEO*

Susan M. Medghalchi, Ph.D., *Director, Biological Lab*

Jill M. McFadden, Ph.D., *Director, Chemistry Lab*

Kimberly Duncan, Ph.D., *Director, Pharmacology Lab*

### **Other Co-Investors**

Emerging Technology Partners

CIP Capital

Other Private Investors

### **Cost to State of Maryland**

\$500,000

### **History**

FASgen was formed by four distinguished Johns Hopkins researchers to develop drugs based on their widely acclaimed discoveries related to the mechanisms and roles of the fatty acid biosynthesis (FAS) system. FASgen has an exclusive license from Johns Hopkins University to the FAS patent estate, with 23 patents either issued or pending, and 75 peer-reviewed publications.

### **Products**

FASgen has chosen to initially focus its effort in three significant areas: cancer, obesity and tuberculosis. FAS inhibitors selectively destroy common cancers of the breast, prostate, colon and lung while sparing the normal tissues. Since cancer cells have been found to depend on this FAS mechanism for growth, the resultant small molecules produced will specifically inhibit the principal FAS enzyme. FAS inhibitors cause weight

loss by affecting several validated targets: centrally, by suppressing appetite via controls located in the brain stem; and, peripherally, by increasing fatty acid oxidation at the cellular level. This development was highlighted in the June 30, 2000 issue of Science magazine. FAS inhibitors are also selectively toxic to mycobacteria, including multiple drug-resistant organisms that cause TB in humans and paratuberculosis in domestic animals; this compound is furthest along in testing and an IND filing is expected next year.

### **Competition**

Various academic and clinical institutions have performed research on the FAS process; for example, Ohio State University has initiated a program (funded by the National Cancer Institute) to identify molecules to attack FAS associated with brain tumors. Other institutions are researching possible vaccine formulations to counter the FAS mechanism.

### **Events**

In May 2005, FASgen was awarded a \$500,000 grant from NIH to complete the final preclinical safety and animal efficacy work in support of the multi drug resistant TB (MDR-TB) investigational new drug submission of its lead proprietary compound.

## **Fidelis Security Systems, Inc.**

**Web site:** [www.fidelissecurity.com](http://www.fidelissecurity.com)

**Location:** Bethesda, MD

**MD Employees:** 15

### **Management Team**

Timothy Sullivan, *President and CEO*

Gene Savchuk, *CTO*

### **Other Co-Investors**

Ascent Venture Partners

Inflection Point Ventures

### **Cost to State of Maryland**

\$500,000

### **History**

Fidelis Security Systems, Inc. was founded in May 2002 to address a major problem in computer security since the advent of the Internet: the unauthorized transfer of sensitive or proprietary information out of an organization's computer network. There have been numerous publicized incidents that involve compromised information including personal identity data, financial accounts, and intellectual property—and Fidelis Security Systems' customers have seen very positive results.

### **Products**

The DataSafe™ Extrusion Prevention System® listens to network traffic on all channels at gigabit speed and identifies critical data types leaving the network, stopping the data transfer in real time and collecting information on the unauthorized disclosure. DataSafe works by reassembling TCP sessions, thus reconstructing the entire network conversation, in real-time. This real-time ability enables DataSafe to prevent non-compliance, versus traditional architectures that can only report that an event has occurred. The architecture is also more flexible than that of its competitors, so that additional capabilities, such as preventing the

proliferation of computer worms, can easily be incorporated. Fidelis Security Systems has built decoders to detect outflows of data from almost all types of major applications, including e-mail, WebMail, FTP, KazaA, source code, spreadsheets, and databases.

### **Competition**

Primary competitors include Vontu, Tablus, and Vericept. Vontu and Tablus collectively have received more than \$20 million in venture investment. Vontu's technology has concentrated more on e-mail proxy technology, while Tablus claims similar technology to that of DataSafe but with a very crude console. Vericept is the most established of the three, but its architecture limits the scope of applications that can be detected.

### **Events**

In February 2005, Fidelis Security Systems received \$4.1 million in venture funding from Ascent Venture Partners, Inflection Point Ventures, and the Maryland Venture Fund.







## Functional Genetics, Inc.

**Web site:** [www.functional-genetics.com](http://www.functional-genetics.com)

**Location:** Rockville, MD

**Employees:** 15

### Management Team

Michael Goldblatt, Ph.D., J.D., *President and CEO*

Joy Lewkowski, CPA, *Director of Finance*

Wu-Bo Li, Ph.D., *Director, Molecular Biology*

Roxanne Duan, Ph.D., *Director, Therapeutic Development*

### Other Co-Investors

Scientia Health Group, Ltd.

Alafi Capital

Sanders Morris Harris Group

### Cost to State of Maryland

\$750,000

### History

Functional Genetics is a biopharmaceutical company engaged in creating new therapies that broadly target and interfere with the symptoms and processes of diseases. In accomplishing this objective, Functional Genetics uses its proprietary Random Homozygous Knockout (RHKO) Technology to causally connect gene identity with functionality in a single experiment that simultaneously discovers and validates new targets for treatment and diagnosis.

### Products

The Company has drug candidates targeting genes and gene products identified by RHKO in various stages of preclinical development. Although the technology is applicable to all areas of medicine, the company's first focus is on host oriented therapeutics for infectious disease – going beyond attacking the pathogen as a measure toward saving the host to targeting a host mechanism to eliminate

susceptibility to the pathogen. Host oriented therapeutics is paradigm shifting and uniquely enabled by the Company's core technology. The Company's first host oriented therapeutic product is a host targeting antibody with broad-spectrum anti-viral potential. Additional Company strategies for targeting host gene products include peptides, vaccines and small molecules.

### Competition

Recently, the use of RNA interference has improved the ability to perform functional analysis for specific genes when their sequences are already known. RHKO, however, enables the discovery and near simultaneous validation of therapeutic and diagnostic targets relevant to specific diseases, without prior knowledge of their existence, solely on the basis of gene function.

### Events

In late 2003 Functional Genetics received two contracts from the Defense Advanced Research Projects Agency for more than \$7M. Additionally, the company is a cooperating institution, in conjunction with the Burnham Institute, on an NIH grant for Identifying Genes Involved in b-amyloid production using the Company's RHKO technology. The Company is anticipating additional Federal contracts.

## GlycoMimetics, Inc.

**Web site:** www.glycomimetics.com

**Location:** Gaithersburg, MD

**Employees:** 14

### Management Team

Rachel King, *CEO*

John Magnani, Ph.D., *VP & CSO*

### Other Co-Investors

New Enterprise Associates

Alliance Technology Ventures

Anthem Capital Management

The Novartis Venture Fund

PTV Sciences, L.P.

### Cost to State of Maryland

\$500,000

### History

GlycoMimetics, Inc. (GMI) was established in 2003 with the mission to develop proprietary, small molecule therapeutics based upon the roles that carbohydrates play in important biological processes. Since then, the company has identified lead compounds in two programs, each of which has significant commercial potential. GMI was founded through the acquisition of assets and expertise of a predecessor company, GlycoTech. GMI now owns or has license to 15 issued US patents and additional applications.

### Products

GMI's first compound is being developed to be used in conjunction with antibiotics to treat infections of *Pseudomonas aeruginosa*. GMI's second product opportunity is in selectin inhibition, a novel approach to treat inflammation. The Company's initial clinical strategy is to use a compound from this class to treat acute exacerbations of chronic inflammatory conditions.

### Competition

While many companies are working in glycobiology, few compete directly with GMI. Competitors in selectin inhibitors include Revotar and Wyeth, as well as companies pursuing other approaches to treating inflammation. GMI is not aware of other companies developing *Pseudomonas* lectin antagonists. GMI believes its product will be complementary - not competitive - with antibiotics.

### Events

In August 2004, GMI successfully completed an extension to its Series A financing, attracting another \$5.1 million to advance its research programs. The Company expects to begin raising its Series B round of funding in late 2005.





## Innovative Biosensors, Inc.

**Web site:** [www.innovativebiosensors.com](http://www.innovativebiosensors.com)

**Location:** College Park, MD

**MD Employees:** 9

### Management Team

Joe Hernandez, *President & CEO*

Ted Olsen, *VP, Operations*

Tom Hazel, Ph.D., *Senior Director, R&D*

### Other Co-Investors

Harbert Venture Partners

New Markets Growth Fund

### Cost to State of Maryland

\$500,000

### History

Founded in mid-2003, Innovative Biosensors Inc. is a biotechnology company employing a novel biosensor technology developed by MIT scientists and published in the journal Science in July of 2003.

### Products

The CANARY™ technology is composed of genetically engineered biosensors that allow for extremely rapid, ultra-sensitive testing of analytes. The company has obtained exclusive rights in several fields, including food testing, animal and human clinical diagnostics, sales to the life science research market and nucleic acid applications. The technology has been refined and in development for over 5 years with DARPA funding. The technology is well suited for the commercialization of tests for emerging infectious diseases requiring high levels of sensitivity, portability and rapid turnaround times. The company plans to develop diagnostic testing systems that are rapid, portable and extremely sensitive for emerging infectious pathogens in both the food safety and human clinical markets.

### Competition

Currently there are assays in development for sexually transmitted diseases, respiratory pathogens, E.Coli and Salmonella. However these tests require laborious sample processing protocols and take as long as three days to complete. In addition, the current testing products often suffer from high false positive rates due to innate contamination potential of the existing technology.

### Events

In May 2005, Innovative Biosensors raised \$3.5 million in Series A financing led by Harbert Venture Partners and including New Markets Growth Fund.

## Intradigm Corporation

**Web site:** www.intradigm.com

**Location:** Rockville, MD

**Employees:** 8

### Management Team

John Spears, *Chairman and CEO*

Martin Woodle, Ph.D. *Founder and CSO*

Patrick Lu, Ph.D., *Founder and Executive VP,  
Genomics and Drug Discovery*

Puthupparampil Scaria, Ph.D. *Founder and VP,  
Synthetic Vectors*

### Other Co-Investors

Emerging Technology Partners

Novartis Venture Fund

### Cost to State of Maryland

\$500,000

### History

Intradigm Corporation was founded in 2000 by Dr. Martin Woodle, Dr. Patrick Lu, Dr. Puthupparampil Scaria, and others to acquire and develop technology they developed at the Gene Therapy Inc. division of Novartis and from academic centers. The Company completed a Series A financing and started operations in June 2001. In late 2002, Mr. John Spears joined as Chairman and CEO. In 2003, the Company completed a Series B transaction to complete the license and assignment for the entire package of Novartis' technology for non-viral nucleic acid delivery.

### Products

The siRNA field is revolutionizing "targeted" therapeutics and Intradigm has led the advancement from test tube to potent, tissue targeted, systemically active agents using its proprietary nanoparticle technology. The Company's initial product, ICS-283, is for

treatment of life-threatening diseases characterized by excessive angiogenesis, including colon, renal, and metastatic cancers. Intradigm has also entered partnerships for development of siRNA products for ocular diseases and co-development of siRNA-based anti-SARS therapeutics.

### Competition

The competitors to Intradigm include commercial entities and academic laboratories. The commercial entities span small to established RNAi biotech companies (such as Alnylam, Sirna, Benitec, and Nucleonics) to divisions of large pharmaceutical companies. In addition, a number of academic laboratories worldwide are working to develop new technology for nucleic acid delivery and RNAi therapeutics. The in-vivo application of RNAi currently faces very little competition since only a few groups provide such reagents and services (such as Mirus and Neopharma).

### Events

Intradigm has announced several collaborations and most recently a major collaboration with Acuity, Inc. in early 2005 for the development of products in ocular disease.

Intradigm was awarded National Eye Institute SBIR and National Cancer Institute STTR Funding in June 2004.

Also, the Company recently published a paper in Nature Medicine that demonstrated their proprietary SARS Coronavirus siRNA inhibitors achieved prophylactic and therapeutic effects in primates.





## MaxCyte, Inc.

**Web site:** [www.maxcyte.com](http://www.maxcyte.com)

**Location:** Rockville, MD

**Employees:** 20

### Management Team

Douglas Doerfler, *President & CEO*

Joseph Fratantoni, M.D., *Chief Medical Officer*

Madhusudan Peshwa, Ph.D., *VP, R&D*

Ron Holtz, *CFO*

Anthony Recupero, Ph.D, *VP, Corporate Development*

### Other Co-Investors

InterSouth Partners

Harbert Ventures

Tall Oaks Capital

Md Bio

VenCap

### Cost to State of Maryland

\$500,000

### Overview

Utilizing its proprietary cell loading technology, MaxCyte is enabling the advancement of promising therapeutic candidates that have been otherwise impossible to development. Founded in 1999, MaxCyte's exclusive flow electroporation system—the most powerful and efficient non-viral cell-loading technology available—is now in use by partners and in MaxCyte's own therapeutic clinical trials.

### Products

MaxCyte's product pipeline includes its lead candidate, currently in Phase I/II clinical trials at Baylor University, for the treatment of Chronic Lymphocytic Leukemia (CLL). Preclinical candidates include collaborations with the University of Pennsylvania, Harvard (Dana Farber) and NHLBI (NIH). In each of these programs,

MaxCyte's unique capabilities have allowed the Company to gain development rights to attractive clinical development programs where preclinical and/or human proof of concept has already been established.

The company has also captured value and commercially validated its capabilities through product partnerships with established biotech and pharmaceutical companies. The Company has entered into license development agreements with partners in clinical and late-stage pre-clinical programs in return for significant research and license fees, clinical milestones, royalties and revenues on sales of MaxCyte's processing systems. Clinical and pre-clinical therapeutic products address pulmonary, cardiovascular and infectious disease, cancer and regenerative medicine. Active partner programs include Silver Spring, Maryland based United Therapeutics' Phase I trial for Pulmonary Arterial Hypertension (PAH).

### Competition

The options for programs requiring the insertion of molecules into cells for the development of commercializable therapies are generally limited to viral vectors, chemical reagents, co-incubation or electroporation.

### Events

MaxCyte closed \$10.7 M in Series A funding in March, 2004.

MaxCyte initiated a Phase I/II for CLL therapy and enabled United Therapeutics' Phase PAH study.



## MetaMorphix, Inc.

**Web site:** www.metamorphixinc.com

**Locations:** Beltsville, MD & Davis, CA

**MD Employees:** 17

### Management Team

Edwin Quattlebaum, *Ph.D., Co-Chairman,  
President & CEO*

Thomas Russo, *Executive VP & CFO*

Ronald Stotish, *Ph.D., Executive VP, R & D*

Stephen Bates, *President & GM, MMI Genomics &  
Executive VP, MetaMorphix*

Dennis Fantin, *Ph.D. VP, Business Development*

Linda Yaswen-Corkery, *Ph.D., CCO, VP, Strategic  
Planning & Risk Management*

Victoria Geis, *VP, Human Resources*

Sue DeNise, *Ph.D., VP, Genomics Research*

### Cost to State of Maryland

\$500,000

### History

The Company was formed in 1994 as a research collaboration between Johns Hopkins University School of Medicine and Genetics Institute (now part of Wyeth). MetaMorphix, Inc. is headquartered in Beltsville, MD and is a life science company dedicated to the discovery and development of products for the livestock, animal and human health industries.

### Products

By drawing on two fundamental proprietary technologies – animal genomics and growth differentiation factors (GDFs) – the Company is seeking to develop products to substantially increase livestock quality and production efficiency, companion animal health and potentially treat human muscle degenerative diseases and metabolic disorders.

MMI Genomics, Inc.(MMIG), a wholly owned subsidiary of MetaMorphix Inc., is a leader in the development of highly informative, robust systems for DNA-based parent verification and diagnostic testing in livestock and companion animals. MMI Genomics has an established service business for DNA-based parentage and identity testing in cattle, dogs and horses, which provides timely and accurate results for the needs of many breed associations, registries and individual livestock and pet owners.

MMIG has also developed superior technology to track cattle throughout the food production chain both simply and cost-effectively. The first application of this technology is MMIG's DNA Certified Beef Program, an integrated food source management system that utilizes patented DNA-tags and tagging devices to provide the ultimate in source verification from producer to consumer.

### Competition

Much of the competition in the animal genomics space is coming from academic centers and private companies such as ImmGen and Pyxis Genomics.

### Events

The Company has licensed its Myostatin Growth Factor technology for human therapeutics to Wyeth, who has completed Phase I trials for Muscular Dystrophy and Phase II trials have commenced.





## **Naviscan PET Systems, Inc.**

(Formerly PEM Technologies, Inc.)

**Web site:** [www.naviscanpet.com](http://www.naviscanpet.com)

**Location:** Rockville, MD

**Employees:** 12

### **Management Team**

Paul Grayson, *CEO*

Steve Yarnall, *VP, Product Development*

Annette Parness, *VP, Finance and CFO*

### **Other Co-Investors**

Sanderling Ventures

Mayo Medical Ventures

Maryland Angels Council

Walker Ventures

Chesapeake Emerging Opportunities

Active Angel Investors

The Atlantis Group

### **Cost to State of Maryland**

\$648,672

### **History**

The fundamental principles of the platform technology were invented by Dr. Irving Weinberg, who left the National Institutes of Health (NIH) in 1995 to found the Company. Naviscan devices are small and easy-to-use versions of positron emission tomography (PET) scanners.

### **Products**

The Naviscan devices employ biochemical imaging to locate cancers. Biochemical imaging takes advantage of the fact that cancer cells concentrate the radio-pharmaceuticals (the drugs used with PET scanners) faster than normal tissue. The Naviscan device recognizes this difference to provide clear images of cancer location and extent. The Company's products have strong patent protection. Naviscan's lead product is a notebook-sized, whole-breast PET scanner (PEM Flex™).

Follow-on products will retrofit other types of mammography systems, for a total available market of ten thousand sites worldwide. The Naviscan scanner will improve biopsy precision and allow a surgeon to perform a lumpectomy with the minimum possible removal of normal tissue.

In addition, as part of the recent financing, the company now has the intellectual property for a B-12 tracer, which was developed at Mayo Clinic. The company will determine if the tracer is successful with the PET device.

### **Competition**

MRI is the major competing technology, although it results in too many false positives. Whole body PET devices do not have the resolution to image small cancers.

### **Events**

The company recently secured a \$6.5 million round of financing Sanderling Ventures and Mayo Clinic Ventures. In addition, Paul Grayson of Sanderling Ventures is the new CEO of the company. The infusion of cash, management and intellectual property from Mayo Clinic will allow the company to have a unique medical device for scanning and the tracer to support high resolution scanning for the breast.



## Navtrak, Inc.

**Web site:** www.navtrak.net

**Location:** Salisbury, MD

**Employees:** 72

### Management Team

Ron Hodges, *CEO*

Jim Duncan, *President*

Douglas Hawley, *SVP, Sales & Marketing*

Michael Carlton-Jones, *CFO*

Christopher Palenchar, *CTO*

### Selected Co-Investors

BaseCamp Ventures

SeaCap Ventures

Ruppert Ventures

Wynnefield Capital

Himalaya Capital Ovation Capital

Milestone Ventures

### Cost to State of Maryland:

\$500,000

### History

Navtrak, Inc. was founded in 1999. The company is an early-stage wireless communications company that has developed and is marketing a web-enabled service providing operators of commercial fleets with real-time access to their vehicles. The solution also reports the location and activities of each vehicle at a given time. Navtrak sells its services through a direct sales force and independent dealers in five regions of the country, and through reseller agreements with value-added resellers with whose products Navtrak has integrated its service.

### Products

A Mobile Manager and an antenna are installed in each vehicle. Additional switches or sensors can also be installed in the vehicle. The Mobile Manager receives signals transmitted from Global Positioning System satellites to determine the

location and velocity of the vehicle. These data and any switch or sensor data are transmitted over a wireless modem in the Mobile Manager to Navtrak's Network Operations Center, a network of secure servers. Customers can then retrieve the information from the web site using an Internet browser. With upgraded service, customers are able to send and receive messages to and from a vehicle as well as among vehicles.

Navtrak generates revenue from monthly subscription fees based on 36-month contracts. Navtrak now has more than 800 customers, in dozens of vertical industries (primarily in delivery, transportation and service businesses) with almost 15,000 vehicles in service.

### Competition

There are several competitors in the marketplace, but none has the combination of distribution channel and technology that Navtrak possesses. The primary competitor is @Road, Inc.

### Events

The Company raised \$13.4M in three institutional equity rounds. Gross Revenue and Recurring Revenue increased 40% compared to the same period in fiscal year 2004, with gross margins of 55%. Repeat sales to existing customers comprise over 20% of all sales and customer "churn" is the lowest in the industry (less than 1% per month). The Company will be cash flow positive in 1Q06.





## NeuralStem Biopharmaceuticals, Ltd.

**Web site:** [www.neuralstem.com](http://www.neuralstem.com)

**Location:** Gaithersburg, MD

**MD Employees:** 3

### Management Team

Richard Garr, *President and CEO*

Dr. Karl K. Johe, *CSO*

### Other Co-Investors

SJRJ LLC

### Cost to State of Maryland

\$500,000

### History

NeuralStem Biopharmaceuticals, Ltd. was founded in 1995 and based on the breakthrough central nervous system (CNS) stem cell technology invented by Dr. Karl Johe.

### Products

NeuralStem has developed and wholly owns the CNS stem cell technology, a key technology for genetic therapies and drug discovery. The Company has patents where precursor cells from human fetal brain and spinal cord areas can be isolated, propagated and efficiently differentiated to generate large numbers of neurons. For the very first time, this technology not only allows for the creation of the many different kinds of neurons that are found in the human CNS. It also allows for their production in commercially significant quantities and under reproducible conditions.

The Company plans to develop and commercialize several cell-based genetic therapy products for intractable neurodegenerative disorders such as Parkinson's disease, Huntington's and Alzheimer's and spinal cord injuries. Second, through a combination of joint venture, co-development deals and/or manufacturing and distribution agreements

function-based live human cell assays will be applied to screen libraries of synthetic and natural compounds. Neuroactive compounds with the potential to treat disorders such as depression, mania, anxiety, schizophrenia and epilepsy will be found. Third, NeuralStem intends to capitalize on its unique cell-based expertise to create genomics databases of gene expression patterns seen during neurogenesis and in drug screening assays.

The first databases have been created and can be accessed through Gene Logic, Inc.'s various products. The Company has also discovered its first neurogenic and neuroprotective compounds, developed with grants from the Department of Defense.

The Company has compelling proof of principle transplantation data (rodent) for Ischemic Paraplegia and expects to be in human clinical trials by the middle of 2006.

### Competition

A number of companies have focused on therapies for neurodegenerative diseases such as Parkinson's, Huntington's and Alzheimer's – several companies have been involved in stem cell research.

### Events

The Company completed a small financing in September of 2005, and will be pursuing further financing in Q106.

## **NexTone Communications, Inc.**

**Web site:** www.nexttone.com

**Location:** Gaithersburg, MD

**MD Employees:** 150

### **Management Team**

Malik Khan, *CEO*

Kenneth Nelson, *CFO*

Sridhar Ramachandran, *CTO*

John Gillespie, *VP, Worldwide Sales*

### **Other Co-Investors**

Core Capital

Safeguard Scientifics

BCE Capital

Blue Rock Capital

Mid-Atlantic Ventures

Seynhaeve Entities

### **Cost to State of Maryland**

\$200,000

### **History**

NexTone Communications, Inc. was founded in February 1998 to design and develop hardware and software for the transmission of data and voice over the Internet. Analog connections would transmit via digital media and not cause a company to rewire its facility. As carriers implement VoIP networks, they are faced with a number of technical issues including network security, signaling interworking and multi-vendor interoperability.

### **Products**

NexTone sells a suite of software products designed to take advantage of various types of communications via the Internet. The NexTone Multiprotocol Signaling Switch (MSW) and the iView Management System (IVMS) are just two of Nextone's products. MSW solves these issues by enabling carriers and other service providers to directly interconnect their networks with other SIP-

and H.323-based networks via IP. IVMS is a XML-based GUI that allows network operators to graphically view and configure NexTone and associated third party products.

### **Competition**

Other companies are seeking entry points as next generation service providers. These providers would use any of the major broadband access technologies to deliver new value added services such as IP Centrex, voice/data Virtual Private Networks (VPN), unified messaging and teleconferencing.

### **Events**

Global deployments to carriers and service providers have surpassed 6 billion minutes of Voice over Internet Protocol (VoIP) traffic capacity on NexTone's session controllers.





## Osiris Therapeutics, Inc.

**Web site:** [www.osiristx.com](http://www.osiristx.com)

**Location:** Baltimore, MD

**MD Employees:** 49

### Management Team

C. Randal Mills, Ph.D., *President & CEO*

Harry E. Carmitchel, *COO*

Cary J. Claiborne, *CFO*

### Other Co-Investors

Boston Scientific, Inc.

Cambrex

Friedli Corporate Financial

JCR Pharmaceuticals Co., Ltd.

Novartis

### Cost to State of Maryland

\$500,000

### History

Osiris Therapeutics, Inc. began operations in December 1992. Its offices and laboratory facilities are located in Fells Point, Baltimore. The Company is engaged in the development of novel cellular therapeutics to promote the regeneration and functional restoration of damaged and diseased tissue.

### Products

Osiris is focused on commercializing adult stem cell therapies. Products in development include cell-based treatments for immune dysfunction following bone marrow transplantation, for damage to the heart after myocardial infarction, for congestive heart failure, and for damaged cartilage in the knee. These cellular therapies are based on the use of adult human Mesenchymal Stem Cells (MSCs) isolated from donor bone marrow. This strategy avoids the controversies surrounding other therapeutic approaches that rely on the use of embryonic cells.

### Competition

There are numerous marketed treatments for the Company's lead indication, for the treatment of immunological complications that can follow bone marrow transplantation. However, the cellular therapy to be offered by Osiris may be unique in moderating the severe side-effects of rejection, without causing the patient to suffer from a general suppression of the immune system. For its cardiac-function indication, the Company faces competition from alternative approaches under development by academic research groups and by companies such as GenVec, BioHeart and Myosix (acquired by Genzyme). In the area of meniscal repair, Osiris believes that only two biological products have reached the market: Cryograft (Cryolife) and Collagen Meniscus Implant (ReGen Biologics). To date, neither has won broad market acceptance.

### Events

In June 2005 Osiris Therapeutics, Inc. finalized a \$50 million aggregate private investment round through equity and convertible debt. The financing will fund the company's three ongoing clinical trial programs using their proprietary adult stem cell technology platform. The round was arranged by Swiss investment firm Friedli Corporate Finance, Inc.

In April 2005 Osiris Therapeutics, Inc. received clearance from the U.S. Food and Drug Administration to begin enrollment in the first human clinical trial for a stem cell therapy targeted at injured tissue in knee surgery patients.

## Paratek Microwave, Inc.

**Web site:** www.paratek.com

**Location:** Columbia, MD

**MD Employees:** 43

### Management Team

Dr. James DiLorenzo, *President and CEO*

Warren Weiner, *CFO*

Dr. Louise C. Sengupta, *Founder and CTO*

Dr. James Oakes, *CPO*

### Other Co-Investors

Polaris Venture Partners

Morgenthaler Ventures

Novak Biddle Venture Partners

Investor AB

ABS Ventures

### Cost to State of Maryland

\$225,000

### History

Paratek Microwave, Inc. is a privately held company established to develop, manufacture and commercialize Electronically Tunable RF (ETRF) components and Dynamically Reconfigurable Wireless Networks (DRWiN) electronically scanning antennas for the wireless telecommunications industry. The technology was originally developed by the founders while working at the Army Research Labs in Aberdeen, MD.

### Products

Paratek's miniature, tunable radio frequency (RF) front ends address the needs of today's multi-function, multi-frequency wireless devices and markets. Benefits of these products include operation at multiple frequencies, smaller size, optimized system performance, and controllable via software. Paratek has also developed a line of high-performance RF switches in support of the miniaturized RF front ends that are also available to

the marketplace as standalone products. These switches are suitable for cell phone and wireless local area networks (WLAN) applications where high power, high linearity, high isolation and low control voltage are required.

Paratek's 2.4 GHz and 900 MHz Smart Scanning Antennas support the expanding requirements of WLAN and radio frequency identification (RFID) applications, featuring position location and tracking, increased capacity, range, and performance.

### Competition

Paratek's core materials technology, Parascan, competes with ferrite and MMIC-based approaches, neither of which have Paratek's performance and cost advantage. No direct competition currently exists for tunable components or electronically scanning antennas with Paratek's price point and performance characteristics.

### Events

Paratek Microwave received \$15 million in Series C funding in May 2005.

Paratek has been awarded numerous government contracts in 2004-05, including two Defense MicroElectronics Activity (DMEA) contracts totaling \$4.4 M, both of which were announced in June 2005.







## Psychiatric Genomics, Inc.

**Web site:** [www.psygenomics.com](http://www.psygenomics.com)

**Location:** Gaithersburg, MD

**MD Employees:** 14

### Management Team

Michael Knable, D.O., Chairman

John Cullinane, Director

C. Anthony Altar, Ph.D., President and CSO

### Investors

Oxford Bioscience Partners

GIMV

Stanley Medical Research Institute

Emerging Technology Partners

Catalytix

### Cost to State of Maryland

\$500,000

### History

Founded in March 2000, Psychiatric Genomics, Inc. (PGI) is a genomics-based drug discovery company focused on providing breakthrough therapies for schizophrenia and bipolar disease using an integrated platform of genomics-based technologies. Psychiatric diseases and other mental health disorders are the second largest worldwide market with significant unmet medical need and thus represent considerable opportunity for the development of new therapeutics.

### Products

PGI differs from traditional central nervous system (CNS) drug discovery companies in two important ways. First, the Company starts with human post-mortem brain samples, from which it identifies unique patterns of gene expression (called the “disease signature”). Similar gene expression technology is also used with human cell cultures to discover genes that respond to effective therapeutics (called the “drug signature”). This information is

searched for areas of overlap to find the critical genes involved in both the pathophysiology and the pharmacology of a given mental disorder.

The second way PGI differs from other companies is in its drug screening methodology. Unlike previous companies that focus on single protein targets, PGI searches for drugs using multiple genomic-based targets. This is accomplished by utilizing PGI's proprietary screening method called the Multi-Parameter High Throughput Screen (MPHTS).

PGI has discovered compounds in the schizophrenia and bipolar disorder projects. The Company is working to optimize these early chemical leads for clinical testing.

### Competition

Because of the size of the market and the large, unmet medical need, both large and small pharmaceutical companies are working in this area. However, Psychiatric Genomics is the only company using human-based disease and drug signatures for drug discovery. In addition, the Company's high-throughput genomic-based drug screening technology, (the Multi-Parameter High Throughput Screen) is unique.

### Events

PGI has published its research findings in leading peer-reviewed journals. In August 2003 the Company announced a \$6M financing commitment with The Stanley Medical Research Institute (SMRI). This additional financing stabilized the Company's needs for two years and, with renewed support from SMRI, is planning drug development studies through 2006.



## **Qovia, Inc.**

**Web site:** www.qovia.com

**Location:** Frederick, MD

**Employees:** 45

### **Management Team**

David Woodall, *President and CEO*

Peter Kendrick, *CFO*

Choon Shim, *CTO and VP, Engineering*

Steven Mank, *COO*

David Collins, *VP, Sales*

### **Other Co-Investors**

Canaan Venture Partners

Nokia Ventures

Anthem Capital

### **Cost to State of Maryland**

\$775,000

### **History**

Qovia, Inc. was founded in 2002 to fill a critical need for products that are developed from the ground up to monitor and manage VoIP phone systems. Qovia's VoIP Management and Monitoring System (VMMSTM) assures the reliability of a customer's VoIP network, monitors and measures the end-to-end voice call quality and increases the efficiency and cost effectiveness of network operations in discovery, asset location, diagnostics and reporting.

### **Products**

The Qovia VoIP Monitoring and Management System (VMMS) consists of a series of software tools that significantly ease management, monitoring and maintenance of Internet phone systems, protect data assets and increase the productivity of IT investments.

Qovia's software modules include tools for phone hardware discovery, T1/E1 monitoring, UPS monitoring, passive/active call quality monitoring

(including packet loss, latency, jitter and MOS scoring), and notification of problems or alarms via pager or e-mail, and other capabilities allowing users to address issues before they affect call quality.

### **Competition**

Competitors range from those with primarily VoIP expertise - Empirix, Clarus, NetIQ, Integrated Research to those with monitoring and management expertise - Micromuse, Concord, Infovista and HP. The Company has not been able to identify competitors with the capabilities under one roof that Qovia has to offer. Qovia's product is easy to install and use and has a very attractive price point. The Company also enjoys an early-to-market advantage over other competitors that try to enter the market.

### **Events**

Qovia closed a \$10.6M Series B round of financing in March 2004. The Maryland Venture Fund's investment was presented to Qovia by Governor Robert L. Ehrlich, Jr. at the Company's Frederick headquarters.

The Company has earned numerous key industry awards, including Internet Telephony Magazine's Product of the Year, Maryland Tech Council's 'IT Product of the Year,' Maryland Innovation Award, and Best of Show from among 450 companies exhibiting at the Federal Office Systems Exposition (FOSE).





## Reactive Nano Technologies, Inc.

**Web site:** [www.rntfoil.com](http://www.rntfoil.com)

**Location:** Hunt Valley, MD

**MD Employees:** 37

### Management Team

Joseph Grzyb, *CEO*

Timothy P. Weihs, *CTO*

Omar Knio, *SVP*

Sam Krupsaw, *VP, Finance and Administration*

John Hannafin, *VP, Business Development*

Bill Gallagler, *VP, Sales*

### Other Co-Investors

SAS Investors

Sevin Rosen

Silicon Valley Bank

Toucan Capital

### Cost to State of Maryland

\$262,148

### History

Drs. Weihs and Knio co-founded Reactive NanoTechnologies, Inc. (RNT) in 2001 and licensed the reactive foil technology from both Lawrence Livermore National Laboratory and Johns Hopkins University for the life of the patents. RNT retains exclusive rights from both institutions in the field of reactive joining. In the fall of 2002, RNT established its development and production facility in Hunt Valley, MD, after initially relying on production and test facilities at JHU.

### Products

RNT's experts have nanoengineered a family of reactive foil products that offer very rapid, very controlled bursts of heat. Heat from the foil can be used in two major areas: Energetics and Joining. In the Energetics area, heat from the foil is used initiate chemical reactions as in the deployment of

automotive air bags, or used in materials joining. In the joining area, NanoFoil is sandwiched between two solder layers and two components, where the heat generated by a chemical reaction in the foil melts the solder, producing a metallic bond between the components. RNT's patented NanoBond joining process offers substantial competitive advantages over current bonding technologies, particularly for joining microelectronic components and dissimilar materials such as metals and ceramics.

### Competition

In the Energetics area, RNT's NanoFoil competes with explosive powders and cords from manufacturers such as Dyno Nobel, Ensign-Bickford and EBA&D. In the area of Joining, RNT's NanoBond process competes with both high-tech and low-tech joining methods, including reflow soldering, adhesives, and specialized welding processes. Competitors include large chemical companies and high-tech welding companies.

### Events

In February 2004, the Company raised a Series B round for \$8.25 million led by Sevin Rosen and including Toucan Capital, Silicon Alley Seed Investors and Silicon Valley Bank. In addition, the Company has been awarded \$4.1 million in State and Federal research grants, including two Phase II SBIRs from the National Science Foundation, a Phase II SBIR from the U.S. Army, and a \$1.9 million ATP award from the National Institute of Standards and Technology. In 2004, RNT's NanoFoil was featured on the cover of the National NanoTechnology Initiative Strategic Plan. In 2005, RNT won the prestigious R&D 100 Award and NASA Tech Brief's Nano 50 Award.

## RF Technologies, Inc.

**Web site:** www.rfvalve.com

**Location:** Columbia, MD

**MD Employees:** 5

### Management Team

Esko Riikonen, *Chairman and CEO*

Eric Feldmann, *President*

Michael Vermehren, *VP*

### Other Co-Investors

Denis Seynhaeve

Calvert World Value Fund

GCI Ventures

Venture Management Consultants

### Investment by State of Maryland

\$299,990

### History

RF Technologies Inc. (RF) is a privately held U.S. corporation, with a wholly owned subsidiary in Finland. Production is in both the U.S. and Finland. RF serves the global market, with sales facilities in North and South America, Europe, Australia and the Pacific Rim. Customers belong to the pulp & paper, mineral processing, industrial intermediates, chemical, mining, power generation and waste treatment industries.

### Products

RF manufactures a full line of On/Off and Control valves for slurry and bulk solids handling services. They solve valve problems related to abrasive, scaling, plugging and corrosive surfaces. The RF Valve, the latest high performance valve design, was introduced to the market in 1994. The RF Valve has several unique features that solve problems associated with traditional pinch valves. The RF Valve's patented design includes an elastomer tube that allows the tube to flex, not stretch, when closing, thus optimizing elastomer resistance to

wear, ensuring longer life as well as higher number of cycles. In addition, the elastomer tube contains a wear monitoring system that provides an alert prior to failure.

### Competition

RF competes with all types of valves offered in the marketplace, but its line of RF Valve and aiRFlex products can better withstand the rigors of abrasive, corrosive and scaling flow media.

### Events

None to report.





## Solution Technology International, Inc.

**Web site:** [www.stius.com](http://www.stius.com)

**Location:** Frederick, Maryland.

**MD Employees:** 6

### Management Team

Dan L. Jonson, *Chairman & CEO*

Edward J. Carson, *President of Global Business Development*

Michael H. Pollack, *CFO*

Mark D. Spaeth, *SVP, Technology*

### Other Co-Investors

Cornell Capital Partners

Montgomery Equity Partners

CrossHill/Georgetown Capital

SQL Star International, Inc.

Key Management Group, Inc.

### Cost to State of Maryland

\$350,000

### Overview

STI is a software product company based in Frederick, Maryland, offering an enterprise solution called SurSITE® for the global insurance and reinsurance industry. The team has a proven international track record in building state-of-the-art insurance and reinsurance systems based on extensive industry knowledge and hands-on experience from actually "doing the business."

### Products

STI offers SurSITE as a complete end-to-end support environment for enterprise-wide reinsurance administration. SurSITE consists of a robust framework of Web-enabled multi-language, multi-currency functional business and processing modules. SurSITE is a major business enhancer for insurers, reinsurers, large insurance groups, and pools. It improves the quality, consistency, and

accuracy of work performed and it positions top management to significantly and measurably reduce operating expenses and diminish errors. SurSITE is back office insurance and reinsurance administration reinvented. For additional information, please visit [www.stius.com](http://www.stius.com).

### Competition

Available systems do not meet the needs of giants like ACE, AIG, Allianz, AXA, Hannover Re, Munich Re, PartnerRe, Swiss Re, Winterthur, XL Capital and the Zurich Insurance Group because they do not offer automation of proportional and non-proportional reinsurance contract combinations throughout the entire reinsurance contract workflow, from ceded and assumed to retroceded business. Most offer a front-end platform and do not solve the more serious back office problem. Often, the competition's staff consists of IT rather than reinsurance professionals that do not fully understand the underlying business issues. In addition, most employ antiquated technology, i.e. DOS/Client-Server. A few of our competitor names include CSC, Sapiens, and SunGard. This problem has existed for decades and remains largely unaddressed.

### Events

Net Worth Technologies and Solution Technologies International entered into an agreement and plan to merge in May 2005.

## Sourcefire, Inc.

**Web site:** www.sourcefire.com

**Location:** Columbia, MD

**MD Employees:** 120

### Management Team

Wayne Jackson, *CEO*

Marty Roesch, *Founder and CTO*

Tom McDonough, *President and COO*

Todd Headley, *CFO*

### Other Co-Investors

Sequoia Capital

New Enterprise Associates

Sierra Ventures

Inflection Point Ventures

Core Capital

### Cost to State of Maryland

\$550,000

### History

Sourcefire is the enterprise's answer to the open source software known as Snort, which Martin Roesch, CTO, continues to develop. The open source community embraced this product and contributed significantly to Snort's development. After tens of thousands of downloads, the Snort team decided to commercialize the product.

### Products

Sourcefire has introduced a unified security monitoring infrastructure for identifying and protecting against network threats. This infrastructure includes Sourcefire RNA (Real-Time Network Awareness) Sensors for proactive passive network discovery and analysis; Sourcefire Intrusion Sensors for state-of-the-art network monitoring, the industry's most accurate threat detection and tightly coupled threat prevention; and Sourcefire Defense Center for integrated, high performance data management and threat response.

Sourcefire's 3D Product Suite leverages technology that reaps the benefits of both a paid experienced engineering team as well as thousands of experts around the world analyzing, testing, fixing the code, and creating new rules.

### Competition

This is rapidly becoming a more mature field, with numerous entrants, including StillSecure, ISS, and Lancope. However, Sourcefire benefits greatly from a sales pipeline derived from open source downloads. Users understand that the enterprise products represent a significant value add over the already well-rated open source equivalent.

### Events

October 2005 - Check Point signs an agreement to acquire Sourcefire, Inc.

June 2005 - Sourcefire selected by Always On as Top 100 Private Company award winner

March 2005 - Sourcefire named Frost & Sullivan's 2005 Network Security Infrastructure Protection Company of the Year







## Vapotherm, Inc.

**Web site:** www.vtherm.com

**Location:** Stevensville, MD

**MD Employees:** 30

### Management Team

Robert Storey, *President and CEO*

William Niland, *Chairman and Director, New Business Development*

Kevin Thibodeau, *VP, Sales & Marketing*

David Lain, *VP, Clinical Development*

Joe Papetti, *Operations Manager*

Mark Collins, *Controller*

### Other Co-Investors

QuestMark Partners

Dr. William Cirksena

Other private investors

### Cost to State of Maryland

\$500,000

### History

Vapotherm's high flow air device was originally constructed as a much larger piece that was applied to animal markets. The current management realized its potential for the human markets and thus licensed the basic technology and modified units for hospitals and other institutions. The product also received FDA 501(k) approval to market the product.

### Products

Vapotherm has developed a high flow therapy system that can deliver breathing gas at flow rates of 5-40 liters per minute (lpm) via a variety of patient interfaces including a nasal cannula. Before Vapotherm, nasal cannula flow was limited to a maximum of 6-8 lpm due to extreme discomfort to the patient at high flows. The patented Vapotherm membrane technology delivers molecular vapor

with nearly 100% relative humidity at body temperature. This warmth and humidity allows high flows to be comfortably tolerated by the patient, and allows improved treatment of a wide variety of respiratory support needs. The Vapotherm 2000i is a safe, convenient, easy to use and affordable respiratory therapy device that may reduce costs and improve patient outcomes. The warm vapor has many clinical applications within today's healthcare market including hospitals, long term care, physician offices, hospices and home care.

### Competition

Competitors, such as Respironics, produce lines of equipment that include ventilation products, multiple humidifiers and masks that can be interchanged, depending on the patient's needs, effectively driving continuous air flows to the patient.

### Events

Vapotherm has tapped the neo-natal market as a growth segment and is installed in 350 NICU's throughout the US, and in nearly 1000 hospitals nationally.

The Company has distribution established in the UK, as well as several smaller northern European markets and has recently signed distribution agreements for France, Italy and Spain.

Vapotherm was selected in 2004 as a Deloitte & Touche Rising Star company in Maryland.



## Wisor Telecom Corporation

**Web site:** www.wisor.com

**Location:** Gaithersburg, MD

**MD Employees:** 50

### Management Team

Mark Mendes, President and CEO

Keith Poulsen, CFO

### Other Co-Investors

SAIC Venture Capital

Mid-Atlantic Venture Funds

Hickory Venture Group

Early Stage Enterprises

Apex Venture Holdings

Boston Ventures

Megunticook Management

Telecommunications Development Fund

### Cost to State of Maryland

\$450,000

### History

Wisor is a provider of software products and services to wireline, VoIP and wireless telecommunications service providers (often referred to in the industry as “carriers”) and other service providers to the telecommunications industry.

### Products

Wisor has a modular product suite that enables end-to-end flow through provisioning and management of telecommunications orders and costs. The suite can be unbundled and tailored to meet specific requirements of an individual customer. The product suite is configured around four primary product offerings (Validator, Exchange Path, Orchestrator, and Business Rules Management System.) all of which are complemented by Wisor maintenance, industry change management services and various professional IT services.

### Competition

Competition in this market include new entrants to the specific niche of “provisioning” outsourcing including NeuStar, IBM, Step 9, Evolving Systems as well as established providers of similar outsourced services that may enter this market niche such as Accenture, Hughes, Electronic Data Systems, and Computer Sciences Corp.

### Events

In February 2004, Wisor Telecom acquired Exchange Link from Telcordia Technologies. Exchange Link is an automated clearinghouse for telecommunications providers used for electronic interconnection ordering of services with multiple trading partners.

In 2005, Wisor Telecom introduced Outsourced Provisioning Services (“OPS”) to leverage its automation, existing process expertise and labor in India to achieve cost and/or performance enhancements that should permit Wisor to earn acceptable margins while delivering sustained cost savings to its customers.





## Challenge Investment Program Overview

### Description

The Challenge Investment Program (“CIP”) is a seed program that was designed to invest relatively modest sums - \$50,000 to \$150,000 – in pure high technology start-up firms. The program was initiated as a grant program in fiscal year 1989 and modified to an investment program as of January 1, 1994.

The CIP requires that the firm retain its principal place of business with Maryland for a period of three years. DBED’s central investment criterion is that a CIP recipient firm should nominally have the potential to be an Enterprise Investment Fund consideration or an attractive equity investment via the private sector within a two-year period. Furthermore, the recipient must match the CIP award on a minimum 1:1 basis. The matching funds typically come from founders, friends, family and angel investors.

All Challenge investments are 10-year legal agreements incorporating a contingent royalty repayment schedule. Assuming an initial investment, the state is entitled to a two percent royalty on revenues in excess of \$500,000 a year, up to a maximum repayment of three times the investment over the life of the agreement. The agreement also reflects that in the event that the Challenge recipient receives outside equity funding, the company must repay DBED a sum equal to one percent of the equity raised in excess of \$500,000, again to a maximum repayment of three times the investment. Total exposure of the recipient’s repayment responsibility would be six times the investment over the life of the agreement.

Over the years, there have been modest increases to the funding limits of the program. As it stands today, an initial investment of \$50,000 is made in a seed stage firm based on the successful review of a submitted business plan followed by a verbal presentation by the principal(s) and further due diligence. This investment is increased in increments of \$50,000 based on the achievement of mutually accepted milestones, which would enhance the firm’s attractiveness to the private sector investment community. A company can receive a maximum of \$150,000 through the Challenge Investment Program. This increase in funding was initiated to further “bridge” the gap between the “seed stage” funding program (Challenge) and the equity program (Enterprise). The objective is to fulfill a financial continuum regarding DBED’s investment strategy.

The repayment obligation has been further modified that, in the event that the recipient received an outside or private sector equity investment during the effective term of the agreement, DBED would reserve the option to convert the indebtedness of the Challenge recipient to equity. The value of this equity investment would be on the same terms and conditions as determined by the lead investor, qualified by DBED. In almost all cases, the qualified investor is a venture capital firm. It is also the intent to do this equity conversion along with an additional investment through the Enterprise Investment Fund, fulfilling DBED’s goal of offering a continuum for an early stage investment.

### Performance

The Challenge Investment Program has invested more than \$10.8 million since 1994. Despite the high risks of start-up financing, an impressive 50 percent of the recipient companies are still in business or have had some type of successful exit from the program. Since more rigorous initial investment criteria have been placed on Challenge recipients (2001), 26% of firms have gone on to receive an equity investment from the Enterprise Investment Fund, alongside the private sector.

Note: On the table on page 10, “^” indicates that a company graduated from the Challenge Investment Program.

## 20/20 GeneSystems, Inc.

**Web site:** [www.2020gene.com](http://www.2020gene.com)

**Date Entered into Program:** 4/16/02

**Amount Invested:** \$ 150,000

### Description:

20/20 Gene Systems, Inc. is a product based company with technology platforms for innovative, proprietary diagnostics based upon novel protein biomarkers for biodefense, cancer and autoimmune diseases. The Company's core technology is Layered Gene Scanning, described in a growing list of publications. 20/20's patented LGS technology comprises a stack of thin-film bioaffinity ("smart") membranes that is applied to various 2-D samples such as tissue sections, multi-well plates, and electrophoresis gels. When used with the Company's bioinformatics software it permits a digital molecular profile of tumors and other tissues without disturbing the shape or morphology of the tissue the preservation of which is required for accurate diagnosis.

## A&G Pharmaceuticals, Inc.

**Web site:** [www.agrx.net](http://www.agrx.net)

**Date Entered into Program:** 2/18/04

**Amount Invested:** \$ 100,000

### Description:

A&G Pharmaceuticals is a theranostics company focused on the rapid development of monoclonal antibodies to disease-specific antigens as a basis for novel therapeutic and diagnostic products addressing a broad range of diseases. A&G is currently focused on the development of breast cancer diagnostic products based on a proprietary growth factor (GP88). GP88 has been found to be overexpressed in 80% of breast cancers. A&G has developed three diagnostic kits for breast cancer. Preclinical studies have been completed and prototypes have been developed for the three kits. A&G also has the therapeutic rights for GP88.





## **Advanced Vision Therapies, Inc.**

**Web site:** [www.avtxinc.com](http://www.avtxinc.com)

**Date Entered into Program:** 12/31/03

**Amount Invested:** \$ 100,000

### **Description:**

AVT is a biotech company focusing on cures for back-of-the-eye diseases, such as age-related macular degeneration, which have addressable markets totaling 10 billion dollars annually. These diseases are the leading causes of blindness in the developed world and have probably, at one point or other, touched the families and friends of most people. The first product, AVT-1, will deliver a novel anti-angiogenic factor to eliminate the defective blood vessels that cause wet age-related macular degeneration and DPR. AVT is uniquely positioned to successfully develop a strong pipeline of products for a broad spectrum of eye diseases. The Company's technology package is complete and includes the gene transfer system, a stable of innovative therapeutic proteins, and scale-up technology for commercialization. AVT has established proof-of-concept for the advantages of its gene transfer technology in animals and is rapidly moving towards clinical application. Finally, AVT is broadening the applicability of its vector platform by incorporating novel technology to regulate the activity of the therapeutic genes.

## **AVIcode, Inc.**

**Web site:** [www.AVIcode.com](http://www.AVIcode.com)

**Date Entered into Program:** 6/14/04

**Amount Invested:** \$ 150,000

### **Description:**

AVIcode, Inc., founded in January 2004 is a first-to-market provider of production-level application monitoring software. Its products protect software investments by substantially reducing application maintenance and troubleshooting costs, while simultaneously reducing development costs by 20-30%. AVIcode's flagship product, Intercept Studio, unobtrusively monitors and detects errors and performance degradations of in-production applications running in today's loosely coupled service-oriented architectures. By bridging the gap between operations and application development, Intercept Studio is a critical component in the growing trend in application life-cycle management. Microsoft is both a referenceable customer and a deep integration partner and the product line is specifically recommended by Gartner to all of its clients.

### Biological Mimetics, Inc.

**Web site:** [www.bmi-md.com](http://www.bmi-md.com)

**Date Entered into Program:** 3/31/97

**Amount Invested:** \$ 50,000

#### Description:

Biological Mimetics, Inc. (BMI) is a biotechnology company that has developed and employs patented "Immune Refocusing" technology to generate a myriad of vaccines to be used in both human and veterinary medicine. Currently, BMI maintains several vaccine development programs targeting viral, parasite, and bacterial pathogens. The Immune Refocusing technology allows the creation of unique antigens that can be used to induce and select unique monoclonal antibodies. Additionally, these antigens can be used for therapeutic, diagnostic, and research purposes. BMI also offers a variety of scientific products and confidential support services designed to assist researchers and institutions in their pursuit of scientific knowledge.

### Brassica Protection Products, LLC

**Web site:** [www.brassica.com](http://www.brassica.com)

**Date Entered into Program:** 10/3/97

**Amount Invested:** \$ 50,000

#### Description:

Brassica Protection Products (BPP) was created by scientists at Johns Hopkins University School of Medicine to ensure that products made from plants that provide the anticancer phytochemical sulforaphane (SGSTM) are developed and made available to the public under rigorous and standardized scientific conditions following strict food safety standards. BPP markets BroccoSprouts™ fresh broccoli sprouts in supermarkets in the U.S., Japan and New Zealand, and Brassica Teas in U.S. supermarkets.





### Cera Products, Inc.

**Web site:** [www.ceralyte.com](http://www.ceralyte.com)

**Date Entered into Program:** 4/2/96

**Amount Invested:** \$ 100,000

#### Description:

Cera Products has produced a line of advanced rehydration and vaccine delivery products that are sold in the United States, Central America and Europe. Its key product, CeraLyte, has proven more effective in reducing symptoms of diarrhea and dehydration as it restores fluid, electrolyte and cell balance, to shorten the length of illness and help shorten hospitalizations. All the Company's products have been developed and tested with the assistance of medical experts at major medical centers, including physicians at Johns Hopkins, and are registered on the National Supply System and available from distributors nationally as well as from the company directly.

### Codign Software, LLC

**Web site:** [www.codign.com](http://www.codign.com)

**Date Entered into Program:** 6/28/05

**Amount Invested:** \$ 50,000

#### Description:

Codign Software, based in Baltimore, Maryland, is a company creating niche products that solve specific problems. Codign's flagship product, CoView for Java, helps companies increase the manageability and accuracy of developer testing. CoView highlights execution flow, focuses on assertions, and reports industry-standard metrics for a consistent, reliable and objective approach to finding defects early in the development cycle.

### Comware, Inc.

**Web site:** [www.comwareinc.com](http://www.comwareinc.com)

**Date Entered into Program:** 12/17/04

**Amount Invested:** \$ 100,000

#### Description:

Comware is developing smart antenna technology for the mobile device, which would significantly improve the coverage area and capacity of wireless data networks. To date, simulations of this technology show that improvements of up to 1000% improvement in signal-to-interference ratio are possible, which also translates into less dropped connections.



### Eka Systems, Inc.

**Web site:** [www.ekasystems.com](http://www.ekasystems.com)

**Date Entered into Program:** 11/15/01

**Amount Invested:** \$ 150,000

#### Description:

Eka Systems' mission is to be the premier global provider of reliable, low-cost, internet-enabled, embedded wireless networks for monitoring, control and automation applications. Towards this goal, Eka has developed a distributed wireless network technology platform, EkaNet that is uniquely positioned to profit from these rapidly expanding markets. Eka Systems is unique because it can vertically integrate this technology into customer-focused solutions where EkaNet provides a distinct competitive advantage.

### Epitaxial Technologies, LLC

**Web site:** [www.epiwafers.com](http://www.epiwafers.com)

**Date Entered into Program:** 3/5/97

**Amount Invested:** \$ 150,000

#### Description:

In its fully equipped clean room facility, Epitaxial Technologies manufactures compound semiconductors and value-added wafer products for the wireless and optoelectronic industries. Epitaxial Technologies offers a low-cost foundry service as well as value-added semiconductor materials and wafer products.

### Expression Pathology, Inc.

**Web site:** [www.expressionpathology.com](http://www.expressionpathology.com)

**Date Entered into Program:** 10/21/02

**Amount Invested:** \$ 150,000

#### Description:

Expression Pathology's products and services are used to discover and validate proteins in diseased and normal tissue. With a focus on tissue analysis and protein biomarker discovery, EPI has developed the only technology available that makes possible discovery of proteins in archived tissue. EPI's Liquid Tissue™ Protein Prep kits enable discovery and validation of new protein biomarkers from formalin-fixed tissue. EPI has developed and filed patents around a portfolio of new technologies that have been validated by prestigious research organizations, like the National Cancer Institute, that enable for the first time extraction and analysis of proteins from archived tissue by accurate, instrumented means, such as mass spectrometry and immunodetection.





### GetIntegrated, Inc.

**Web site:** [www.getintegrated.com](http://www.getintegrated.com)

**Date Entered into Program:** 9/11/00

**Amount Invested:** \$ 100,000

#### Description:

GetIntegrated provides proactive human resource solutions to small-and medium-sized businesses in every phase of the business cycle, to help them more effectively attract, retain and manage human capital. By streamlining their administrative processes and using one of two, unique solutions — iComp and iFlex, the managers/employers can focus on the core competencies and strategic challenges of their businesses — the revenue generating aspects. GetIntegrated's HR professionals deliver value to clients via onsite, call center and online support and communication. GetIntegrated began as a bricks-and-mortar HR outsourcing business in 1998, and has now web-enabled all of its services, so clients and their employees will have access to personal HR data through customized, corporate portals.

### Harta Instruments, Inc.

**Web site:** [www.hartacorporation.com](http://www.hartacorporation.com)

**Date Entered into Program:** 4/2/96

**Amount Invested:** \$ 150,000

#### Description:

Harta Instruments is a multi-disciplined, full service, ISO 9001 compliant, electronics engineering company located in Gaithersburg, Maryland. Using the company's patented technologies, they have designed, manufactured, and marketed their line of Microplate Luminometers and Luminometer Reference Plates. Harta's products are available as OEM. Harta Instruments is also a contract manufacturer of biomedical instruments and other electronics devices.

### Hyperspace Communications, Inc.

**Web site:** [www.hypership.com](http://www.hypership.com)

**Date Entered into Program:** 2/27/98

**Amount Invested:** \$ 100,000

#### Description:

Hyperspace Communications, Inc. is developer and patent holder for all Hypership Trusted Information Exchange solutions and delivers integrated applications for government and industry licensees and users. Hypership can be universally used for business-to-business, business-to-customer, government-to-government and business-to-government information and data exchanges ranging from short forms and documents to very-large digital files.

### Intralytix, Inc.

**Web site:** [www.intralytix.com](http://www.intralytix.com)

**Date Entered into Program:** 4/18/01

**Amount Invested:** \$ 100,000

#### Description:

Intralytix was founded in 1998 to address growing problems in the control and treatment of disease causing bacteria. These problems are presently compounded by public and governmental reluctance to employ new and potentially hazardous chemical agents or solutions born of recombinant technology. Intralytix is using its core bacteriophage technology to develop novel natural products for use in food processing, environmental clean up, sanitation, consumer products and problems of antibiotic resistance in human therapy. In June 2002 Intralytix received an Experimental Use Permit from the US Environmental Protection Agency for the first in a line of products designed to prevent bacterial contamination of food and food processing plants.

### JDA Medical Technologies, Inc.

**Web site:** [www.jdamed.com](http://www.jdamed.com)

**Date Entered into Program:** 10/31/03

**Amount Invested:** \$ 100,000

#### Description:

JDA Medical Technologies, Inc. ("JDA") is an early stage medical technology company that has created a radio therapeutic device to treat solid tumors which are based in predictable vascular distributions. The JDA-Sphere is the company's first and primary product. It is a micro particle that can be assembled onsite as a kit or offsite at a central location as a physician's prescription dictates. The microspheres that are produced from the kit are administered to the patient via an outpatient procedure that consists of injecting the microspheres into an artery that feeds the tumor. JDA's advantages over other sphere-based radiotherapeutics stem from the fact that JDA uses chemistry for assembling the spheres, as opposed to manufacturing the devices with complex, central nuclear reactors.





### KoolSpan, Inc.

**Web site:** [www.koolspan.com](http://www.koolspan.com)

**Date Entered into Program:** 5/29/03

**Amount Invested:** \$ 150,000

#### Description:

KoolSpan provides security, authentication and remote access in a single package without servers. The patent-pending Smart Card system (embedded software on a dongle) allows for network security by employing a key-like approach. The KoolSpan SecurEdge extends to the enterprise and allows businesses to build secure wired or wireless networks at low cost and with incredible ease and interoperability. With the KoolSpan system in place, companies negate the chance for security breaches and bottlenecks by automatically authenticating the user and not the computer. There is no costly infrastructure to manage, no back-end servers and authentication is done at the edge of network, where implementation and security are most effective. Smart Card VPN remote access is possible from nearly any point on the network.

### LearnScape Corporation

**Web site:** [www.learnscape.com](http://www.learnscape.com)

**Date Entered into Program:** 10/3/97

**Amount Invested:** \$ 150,000

#### Description:

LearnScape is an education company that provides technology based training programs for adult learners in companies, job-training programs, welfare to work programs, community colleges and correctional institutions. LearnScape provides the SkillsCOMPASS family of reading, math and work habits programs to prepare individuals to enter the workplace or to advance on-the-job. SkillsCOMPASS offers 163 contextual, workplace oriented lessons with English and Spanish audio in LAN and Internet versions to allow training anywhere and anytime. Xerox Corporation, Ocean Spray Corporation and Aerostructures Corporation are some of LearnScape's customers for our custom technology based training programs. LearnScape has recently released an innovative GED preparation program called GED Pathway. This program offers 66 interactive lessons in reading, math, social studies, science, literature and essay to prepare individuals to take and pass the GED high school equivalency examination. There are also prescriptive pre and post tests and the program is available in US and Canadian versions (including French) and can be delivered in local area networks, in a CDROM and over the Internet.

### Maxion Technologies, Inc.

**Web site:** [www.maxion.com](http://www.maxion.com)

**Date Entered into Program:** 4/11/02

**Amount Invested:** \$ 100,000

#### Description:

Maxion Technologies, Inc. develops semiconductor lasers specifically designed to enable reliable, broadband and wireless optical communications. The company also develops lasers supporting products for chemical sensing systems and industrial process controls. Based on research commercialized from two institutions, the lasers are able to transmit over free space while preventing components from overheating.

### MicroEnergy Systems, Inc.

**Web site:** [www.microenergysystems.com](http://www.microenergysystems.com)

**Date Entered into Program:** 6/26/96

**Amount Invested:** \$ 50,000

#### Description:

MicroEnergy Systems was founded in 1988. The company relies on combustion of activated carbon for DOD and chemical/biological warfare disposal and the company implements microcoal technology that can be used in modular and portable power plants, plus operates more efficiently. Certain military agencies cannot process conventional coal to dispose of chemical weapons, thus the one application. Some utility plants are already employing this technology to produce electricity. Additionally, MicroEnergy Systems has a manufacturing relationship with Beitzel Corporation of Grantsville, MD.

### MobileCom Networks, Inc.

**Web site:** [www.mobilecomnetworks.com](http://www.mobilecomnetworks.com)

**Date Entered into Program:** 6/30/04

**Amount Invested:** \$ 50,000

#### Description:

MobileComNetworks, Inc. (MCN) is building the first and largest mobile marketing and commerce network for the 21st century. MCN's patented mobile marketing network uses intelligent location technology to enable marketers to deliver valuable information to consumers when they most need it and are able to act. For consumers, MCN's LocalBuddy™ service offers valuable content and location relevant opportunities, providing valuable information and offers where and when they can best take advantage of them.





### New Hope Pharmaceuticals, Inc.

**Web site:** [www.newhopepharma.com](http://www.newhopepharma.com)

**Date Entered into Program:** 10/23/00

**Amount Invested:** \$ 150,000

#### Description:

New Hope Pharmaceuticals, Inc. (NHP) has developed certain cell-based response technologies that identify which FDA approved anti-cancer drug is likely to work on each individual patient — permitting pre-treatment, response-based, personalization of therapy. It will allow drug discovery at the cellular level rather than at the molecular level. Finally, since new diagnostic categories are being defined on the basis of differential drug response, individual genetics and the company's proprietary gene expression mapping creating new knowledge and target gene information on which NHP and its partners can base their design of new drugs.

### Norris Electro Optical Systems Corporation

**Date Entered into Program:** 3/14/95

**Amount Invested:** \$ 50,000

#### Description:

The Company develops a device that can be installed in airplane cockpits and can assist pilots during landings, especially in adverse weather conditions such as fog. The Company also produces a runway incursion device that is placed on the side of a runway to avoid potential collisions on the ground between aircraft.

### OncoImmulin, Inc.

**Web site:** [www.phiphilux.com](http://www.phiphilux.com)

**Date Entered into Program:** 7/15/95

**Amount Invested:** \$ 75,000

#### Description:

OncoImmulin, Inc. has designed, synthesized, validated, and patented a new class of protease substrates. Unique aspects of these molecules are: (1) incorporation of amino acid sequence information from both sides of protease cleavage sites (up to ten amino acid residues), thereby providing not only linear but three-dimensional specificity for proteases and (2) ability to cross intact cell membranes enabling measurement and inhibition of intracellular protease activities in living cells. Exploitation of elements of this latter point form the basis for OncoImmulin's patented design for the therapeutic delivery of peptide-based protease inhibitors as well as peptide-based inhibitors of other intracellular targets in sizes ranging up to twenty amino acids.



### Phoenix S&T, Inc.

**Web site:** [www.phoenix-st.com](http://www.phoenix-st.com)

**Date Entered into Program:** 2/11/02

**Amount Invested:** \$ 150,000

#### Description:

Phoenix S&T, Inc. (PST) is an early-stage startup developing microscale, low-cost and disposable polymer tools for protein profiling. The Company's eight patents and patent applications cover microfluidic architecture and microinjection molding techniques. With this platform, the Company creates microfluidic arrays for mass spectrometry and multidimensional separation analyses of proteins that represent a colossal step change from existing tools. The Company's first product, the mass spectrometer use-once disposable interface, enables the mass spectrometer to produce more definitive results than existing technology by reducing background and improving ion-forming efficiency. This device can be retrofitted to any existing mass spectrometer of different makes. The mid-term product is a multidimensional separation device that aims to replace the cumbersome and often irreproducible 2-D gel separation for proteins.

### Plethora Technology, Inc.

**Web site:** [www.plethoratech.com](http://www.plethoratech.com)

**Date Entered into Program:** 2/7/02

**Amount Invested:** \$ 100,000

#### Description:

The Company provides innovative remote access and collaboration software. Secure Virtual Workspace, Plethora's flagship product, delivers integrated enterprise security architecture (firewall and VPN) with built-in user productivity features such as presence-based text and voice conferencing, file access and exchange and real-time collaboration.





### Realinterface, Inc.

**Web site:** [www.realinterface.com](http://www.realinterface.com)

**Date Entered into Program:** 4/25/05

**Amount Invested:** \$ 50,000

#### Description:

Realinterface has created a new platform that applies to both clinical trial screening / enrollment, and for first responders. InClinix allows a candidate to be interviewed for multiple trials simultaneously while also collecting critical data that can be used to shorten time to market for the sponsoring drug companies. ThreatScreen is a tool used by first responders to quickly assess victims to determine chemical, biological, or nuclear agent exposure in less than 1 minute. ThreatScreen not only provides immediate access to response protocols but also collects patient data in the field. This data initiates real-time notification, can be shared inter- or intra-organization, and can be used in performing macro or micro epidemiology trend analysis within and across government agencies.

### ReProtect, Inc.

**Web site:** [www.reprotect.com](http://www.reprotect.com)

**Date Entered into Program:** 10/1/02

**Amount Invested:** \$ 50,000

#### Description:

ReProtect, Inc. is the first company to offer a vaginal microbicide that works by maintaining the natural environment of the female reproductive tract. Reprotect's products are among the first to be tested for contraceptive efficacy and to protect from STD infection without the use of hormones or potentially damaging detergents, such as nonoxynol-9. ReProtect has completed Phase 1 clinical trials on the safety of BufferGel™, both in the U.S. and internationally and has been chosen by the NIH for further testing in two separate Phase II/III trials, including one which will determine its ability to prevent HIV transmission.

### Royer Biomedical, Inc.

(Formerly Buford Biomedical, Inc.)

**Web site:** [www.royerbiomedical.com](http://www.royerbiomedical.com)

**Date Entered into Program:** 4/24/97

**Amount Invested:** \$ 100,000

#### Description:

Royer Biomedical has a diverse pipeline of products in the areas of anti-infectives, anti-tumor agents, pain management, vaccines, and therapeutic proteins, based on its proprietary, controlled release, drug delivery technologies: Matrix III (a resorbable, inorganic/biopolymer composite) and R-Gels (a recently developed, resorbable, injectable gel). The Company has one product on the market, Silvadex SR, an anti-infective paste used to treat equine white line disease and thrush, and is also developing a novel equine anti-parasitic, Iverdex Equine.

### Salar, Inc.

**Web site:** [www.salarinc.com](http://www.salarinc.com)

**Date Entered into Program:** 8/30/04

**Amount Invested:** \$ 50,000

#### Description:

Salar, Inc., founded in 1999, provides IT solutions for physicians and medical institutions to make them more productive by automating onerous, redundant, error-prone business processes. Salar's lead product, Compliance+, is an enterprise application accessible via Tablet PCs that enables physicians to improve the efficiency of inpatient documentation, while enabling Hospital Information Management departments to access inpatient documentation remotely and in real-time.

### Sensics, Inc.

**Web site:** [www.sensics.com](http://www.sensics.com)

**Date Entered into Program:** 9/21/04

**Amount Invested:** \$ 50,000

#### Description:

Sensics makes a high-end virtual reality (VR) system that provides a safe and adaptable method for training individuals to work in complex or dangerous environments. SkyVizor is a headset that most closely simulates a field of view approaching that of the unobstructed human visual field. The SkyVizor has been integrated as part of a complete VR system with a powerful distributed network of computers and the newest generation of motion tracking. This system was originally designed to satisfy Honda's requirements for a very high fidelity virtual prototyping system, and the original technology development was conducted between Honda and John Hopkins University.





### Sequella, Inc.

**Web site:** [www.sequella.com](http://www.sequella.com)

**Date Entered into Program:** 4/11/02

**Amount Invested:** \$ 150,000

#### Description:

Sequella, Inc. is a vertically integrated biopharmaceutical company whose initial efforts are focused on diagnostics and treatment of TB. Sequella's technologies address unmet needs of the marketplace to provide diagnostics that accurately detect the presence of TB disease (latent or active) and therapeutics that can be efficiently and affectively administered. Sequella will work with global healthcare agencies to introduce its products into all markets. Sequella's front-line technologies include the Transdermal Patch test, a TB diagnostic that began Phase III clinical testing in February 2005.

### Sitek Research Lab

**Web site:** [www.siteklabs.com](http://www.siteklabs.com)

**Date Entered into Program:** 2/27/97

**Amount Invested:** \$ 50,000

#### Description:

SITEK Research Laboratories has been providing high quality genetic toxicology testing services for safety evaluation of chemicals and pharmaceuticals for regulatory submissions since 1984. SITEK is a fully compliant GLP laboratory having JMAFF certification and AAALAC accredited animal facilities.

### Smart Surfaces, LLC

**Date Entered into Program:** 4/28/00

**Amount Invested:** \$ 50,000

#### Description:

The Company has developed a coating for ships and power plants that will effectively ward off zebra mussels and like creatures from adhering to their surfaces.

### TeleContinuity, Inc.

**Web site:** [www.telecontinuity.com](http://www.telecontinuity.com)

**Date Entered into Program:** 1/22/04

**Amount Invested:** \$ 50,000

#### Description:

TeleContinuity provides its customers with access to its patent pending Survivable Communication Network that is utilized in the event of an emergency, disaster, evacuation or communication outage. TeleContinuity can guarantee that every company or government agency executive and employee will be able to receive all inbound calls to their original telephone number. Calls will be rerouted to each subscriber wherever they are and over any talking device (telephone, cell phone, IP phone, laptop, PC or PDA) that has access to either the Public Telephone Network or the Public Internet. During the emergency, TeleContinuity also provides subscribers with a full range of telephone features such as messaging, voice mail, conference calling and speed dialing along with full outbound call capability. The TeleContinuity solution is vital to all Continuity of Operations plans for business and government agencies.

### Tenable Network Security, Inc.

**Web site:** [www.tenablesecurity.com](http://www.tenablesecurity.com)

**Date Entered into Program:** 6/30/03

**Amount Invested:** \$ 100,000

#### Description:

Tenable produces an array of security management products designed to give enterprises a dedicated and distributed way to manage network risk and threat information. It captures meaningful data by which to make tactical and strategic decisions that protect corporate information and provides a platform to communicate and act on those decisions.

### Tri-Kor Alloys, LLC

**Web site:** [www.tri-kor.com](http://www.tri-kor.com)

**Date Entered into Program:** 4/13/98

**Amount Invested:** \$ 150,000

#### Description:

Tri-Kor develops and commercializes novel, ultra-high strength aluminum alloys. The alloys are innovated and then sold to OEMs in the sports equipment and transportation industries. Alloys are sold in various semi-finished product forms as well as in fabricated components.





## Xlipstream Corporation

**Web site:** [www.xlipstream.com](http://www.xlipstream.com)

**Date Entered into Program:** 5/21/04

**Amount Invested:** \$50,000

### Description:

Xlipstream offers XML generation appliances that capture and translate data as it is printed or transmitted from predetermined devices, as well as legacy, proprietary and text-based systems. Xlipstream products translate data into XML and deliver it into applications, such as integration engines, databases or Enterprise Resource Planning (ERP) applications. As the leading standard data format, XML-based information can be used by every current application within a company's environment.



## ENTERPRISE VCLP FUND

The Maryland Venture Fund (MVF) has invested as a limited partner in a total of nine venture funds since 1995. These venture funds were selected based on their investment philosophy and performance as well as a commitment to consider investments in the State of Maryland. All of the private funds emphasize investing in early stage, high technology and life sciences companies. DBED's involvement as a limited partner complements the Enterprise Investment Fund's existing initiatives, improving the flow of information between public and private sectors and providing opportunities to co-invest. The following is a summary of the venture funds in which DBED is a limited partner:

**Anthem Capital I**, founded in 1994, is an SBIC fund based in Baltimore, Maryland. The firm invests in rapidly growing technology and life science companies in the Mid-Atlantic region. The MVF has invested \$500,000 in the fund to date. This fund is nearing the end of its investment life. The total fund size is \$42M.

**CIP Capital** invests in communications and life science companies. The MVF made a \$500,000 investment in CIP Capital in fiscal year 1995. The total fund size is \$20 M. This fund is nearing the end of its investment life.

**Meridian Management Group (MMG)** was founded in 1998 as a spin-off from DBED to create a minority private sector fund. DBED made a \$5 million investment to MMG in invest in minority businesses in economically challenged portions of the state.

**Boulder Ventures III, LP** is an \$85M fund based in the Baltimore region. Boulder Ventures seeks opportunities in enterprise software, internet-based business applications and services, communications infrastructure and services, and life sciences tools and services. The MVF committed \$1.5M to this fund beginning in 2000.

**Grotech Partners V, LP** is a \$287M fund that originates and leads investments in emerging and traditional industries. These include communications, technology and consumer, healthcare, and business products and services. Grotech looks for opportunities in the Mid-Atlantic region and the Southeast. The MVF committed \$1.5M to Grotech Partners V, LP in fiscal year 2000.





**Walker Ventures** is a \$90M SBIC fund. Walker Ventures invests in technology companies, with a bias towards Internet infrastructure and software technologies in the Mid-Atlantic region. The MVF committed \$1.5M to Walker Ventures in fiscal year 2000.

**Inflection Point Partners** provides venture capital to early stage telecommunication, information technology and electronic commerce companies. The MVF committed \$1.25 million to Inflection Point Ventures I and \$250,000 to Inflection Point Ventures II. Inflection Point Ventures II is an SBIC with approximately \$100M under management.

**Toucan Capital** is a \$120 million SBIC fund focused on seed and early-stage life science and advanced technology investments. As a result of the TEDCO legislation a \$4M investment was made in Toucan Capital in 2002.

**The New Markets Growth Fund (NMG)** is a \$20 million private venture capital fund that makes equity investments and provides operational assistance to both early-stage ventures and small- to mid-sized growth companies located in the Greater Baltimore-Washington and Northern Virginia Area. The MVF made a \$500,000 commitment to the fund in fiscal year 2003.



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